JUNE 27, 1960

PAPER TRADE JOURNAL

Mexican Brewer Starts Up New Continuous Pulp Mill, #3 P. M.

Corrugated Box Demand Seen at 4 Billion S.F. a Week By 1975

Longevous Vacuum Pumps Equated To Installation, Bearing Lube

National, International Experts Survey Bleaching at Chicago Meet

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Editorial Dept.
University Microfilms, Inc.
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Ann Arbor, Mich.

Passes even the "white glove" inspection—thanks to new standards of cleanness by Dow Industrial Service

You may never have occasion to apply "white glove" requirements to the cleanness of your process equipment, steam generators, tanks and piping. But, if you do need this high degree of cleanness, Dow Industrial Service can offer it — as an additional service — in the chemical cleaning of *your* plant equipment.

These new standards were developed by Dowell for cleaning the piping networks of the missile launching facilities at Cape Canaveral. Combining the research and engineering facilities of the entire company, new techniques, materials and equipment were perfected to meet the necessary rigid specifications.

This new service is now adaptable for use in all types of American industry. For example, an intricate cleaning job was recently performed on a 3½-mile-long buried pipeline. The customer wanted to convert the six-inch line from hydrocarbon gas to carry oxygen. For this pure product the line had to be immaculate—free of all foreign materials. The plant was faced with the alternate of laying new pipe—a six week job at a cost of $150,000.

Using the new standards of cleanness, the line was cleaned of hydrocarbon residues, carbon black, grease, mill scale, and rust. The cleaning job was done in 3½ days at a cost of $20,000. Meanwhile, plant crews made mechanical alterations to the line at a cost of about $25,000.

The job was satisfactory in every way. Inspection showed the line was free of all foreign matter. The customer credited the job with saving them about $100,000. Also the plant made additional profits because the line was put back into use so quickly.

Ask about these new standards of cleanness and their possible application to your problems. This exclusive service may save you important money. Dow Industrial Service offers the cleaning services formerly provided by Dowell. For engineered recommendations or more information, call the office or station near you. Or write Dow Industrial Service, 20575 Center Ridge Road, Cleveland 16, Ohio.

Chemical Cleaning Services for all industry

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DIVISION OF THE DOW CHEMICAL COMPANY

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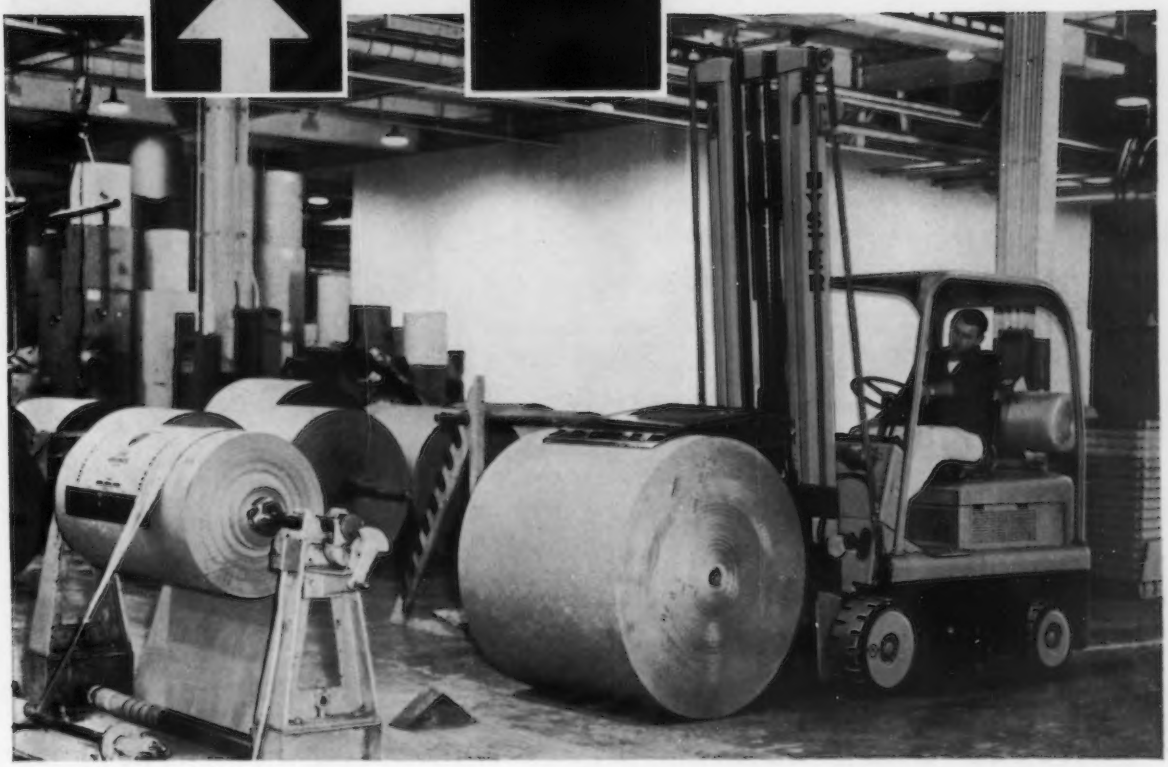

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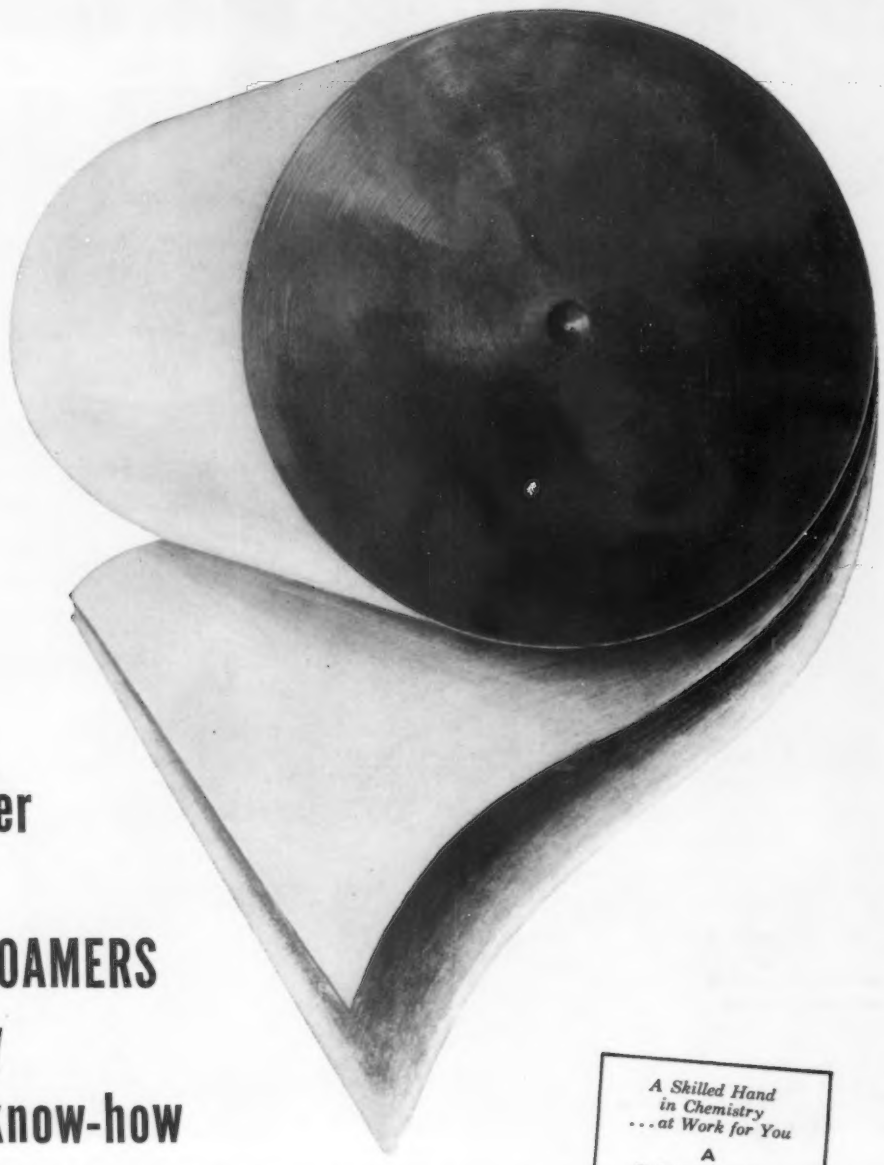

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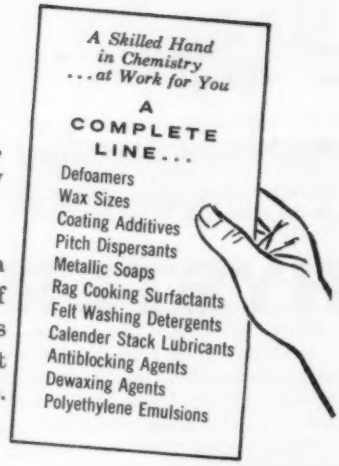
One of the causes of a bad run of paper can be foam. Bubbles that carry fiber, size or color on their surface burst and leave light spots. Those that carry filler or dye leave dark spots. Either way, the sheet won't pass inspection.

Many variables contribute to foam formation. Since each mill has its own distinct foaming problems—because of differences in equipment, type of water, chemicals used and running speeds—it takes a wide range of defoamers to meet them all. Let your Nopco specialist work with you to develop the best system for your conditions. Write for specific information and for literature.



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PUBLISHED WEEKLY SINCE 1872

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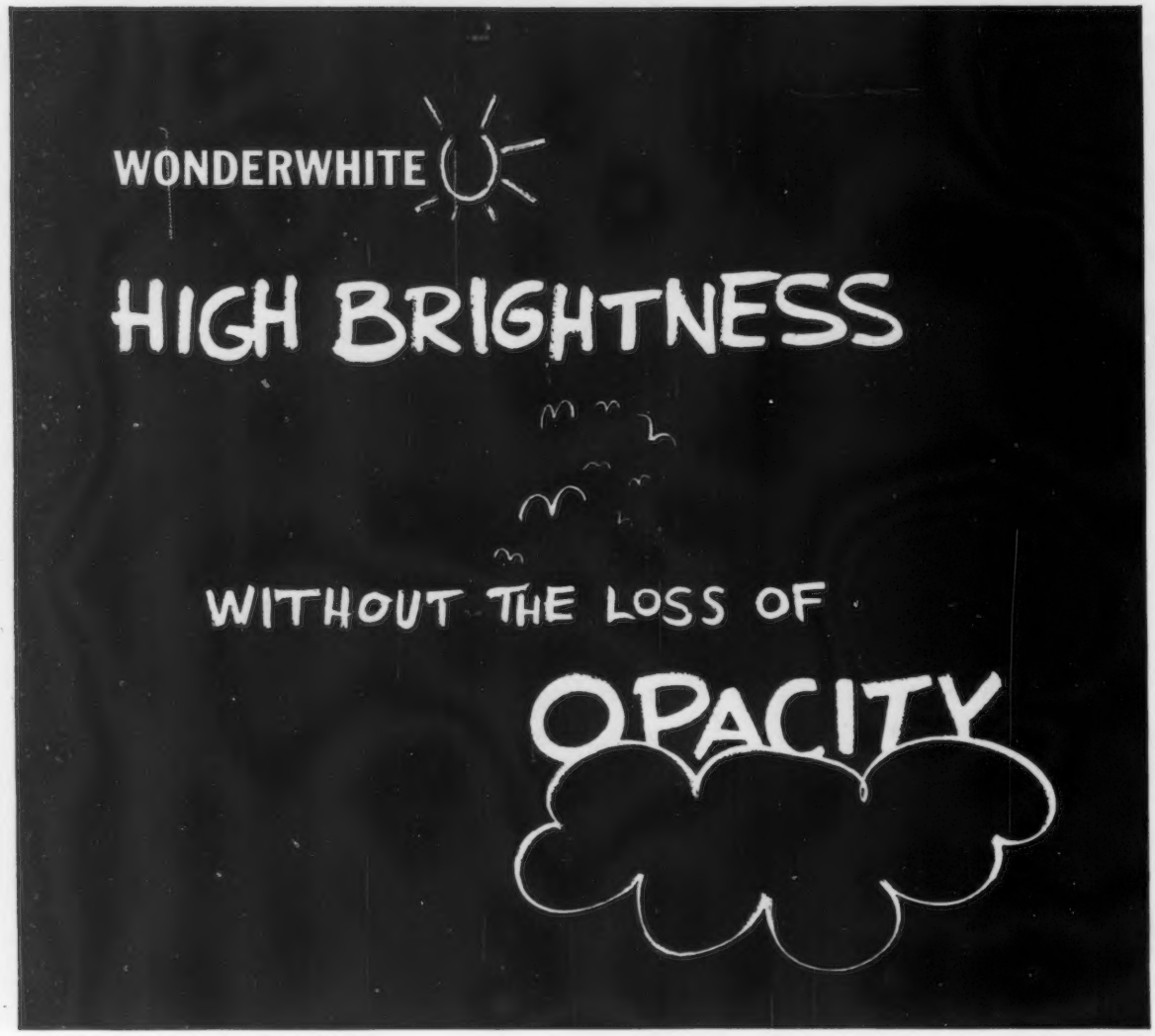

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There are a number of pulps which offer high brightness...There are others which offer high opacity.

But now Gaspesia is producing WONDERWHITE: a pulp which features *high brightness and high opacity*.

Gaspesia, with its Northern Spruce, has always been known for high opacity pulp. Now, by using Chlorine Dioxide, the highest level of brightness has been achieved—with *no loss in opacity*.

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After six months of corrosive glue . . .

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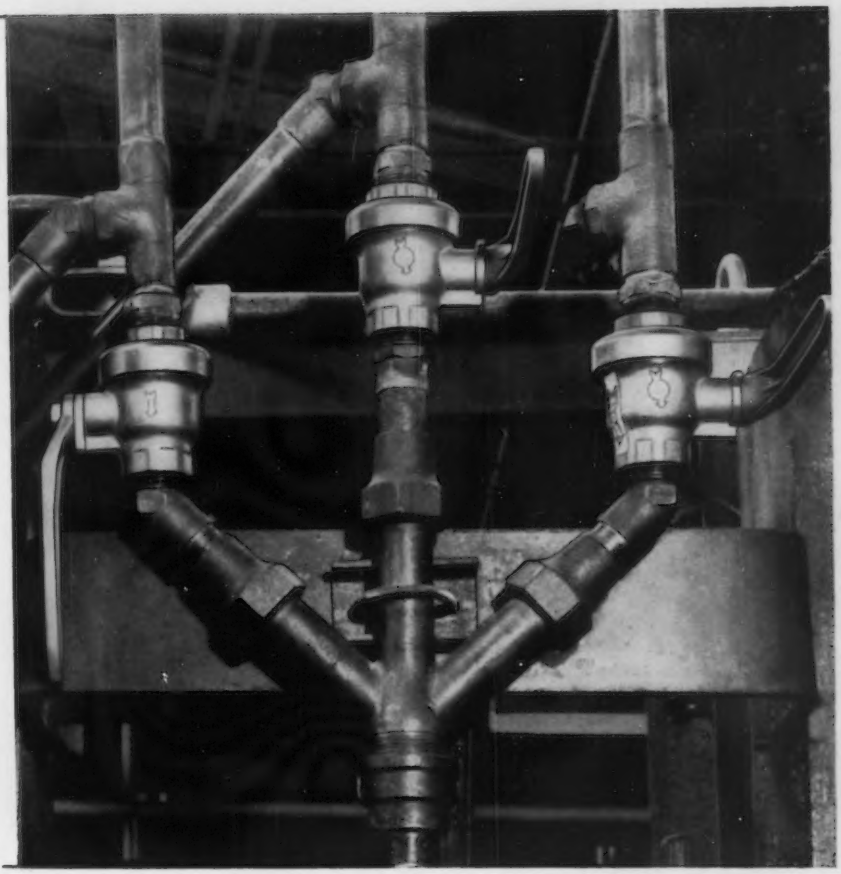

Controlling the flow of a highly corrosive paste base fluid requires a valve that can really take it. In the Calfskin Processing Division of the Endicott-Johnson Shoe Corporation, Rockwood Two-Seated Stainless Steel Ball Valves Fig. 204 are giving top performance under this severe condition.

These stainless steel valves provide maximum corrosion-resistance against this type of fluid, and despite its "solid" nature there is no build-up — thanks to full, round flow! What's more, shut off is *positive*, leakproof . . . because exclusive retainer springs back up two Teflon* seats . . . automatically compensate for pressure variations, wear, cold flow and temperature effects.

This leakproof, trouble-free service is typical of the way in which Rockwood Ball Valves handle everything — from alcohol to asphalt, air to water glass. *And* you get these other remarkable engineering features too: smooth, full, round flow; easy ¼ turn opening and closing; positive tight sealing without lubrication and longer wear resistance.

For use at temperatures from −100°F to 400°F, Rockwood Ball Valves can be easily modified for cryogenics applications. Available in all pipe sizes from ½" to 10", there are 4 models for service up to 600 p.s.i.

No matter what your piping requirements, Rockwood Ball Valves assure you of fast-acting, dependable service. Send coupon for more information on today's most versatile, corrosion-resistant ball valve.

*DuPont Reg. T.M. Teflon seals include seats and adjustable chevron stem packing. Also available with nylon or synthetic rubber seals.

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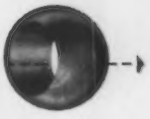
The Only Valve with FULL, ROUND FLOW



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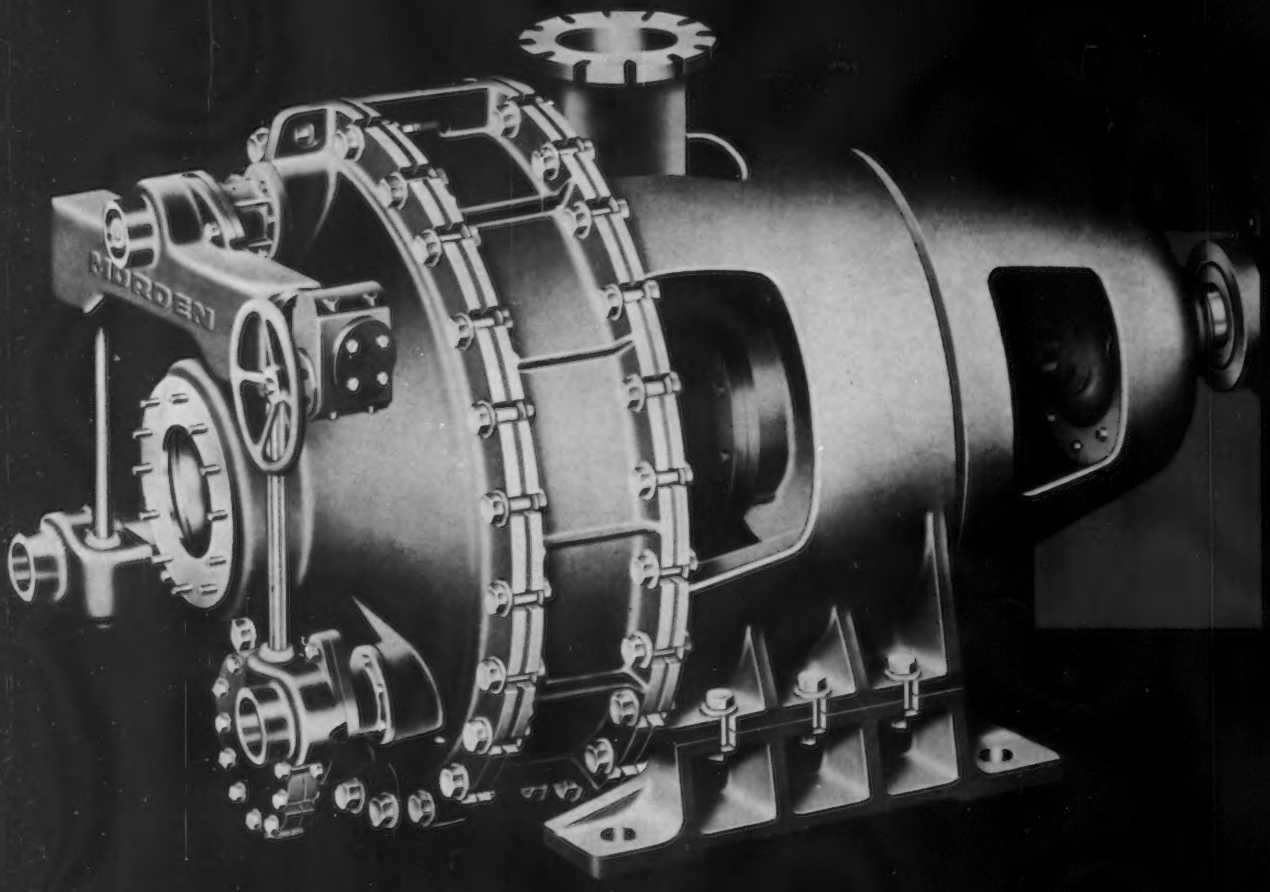
A BRILLIANT TRIUMPH IN STOCK PREPARATION EQUIPMENT



the all NEW MORDEN DISCO · FINER

one versatile machine that provides: amazing precision · tremendous productive capacity · self-pumping, self-pressurizing · low power per ton of production · unlimited adaptability for production

HERE, at last, is a truly significant NEW development in stock preparation equipment. Simple flow and filling changes adapt the new DISCO-FINER so that it will either defiber or refine. Because plates are *self-aligning,* as the result of a new principle in refiner design, this equipment operates with amazing precision. The self-aligning semi-conical design of rotor and stator plates overcomes warpage or distortion. The new DISCO-FINER is engineered to deliver high production without any sacrifice of quality. It is modern in every respect.

All parts are designed to withstand many times the stresses of normal use so that precision is maintained under all conditions. Easy-to-remove housing makes plates readily accessible.

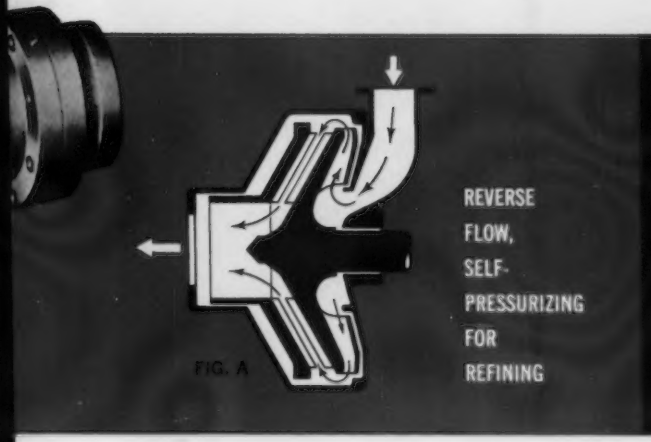


FIG. A

REVERSE FLOW, SELF-PRESSURIZING FOR REFINING

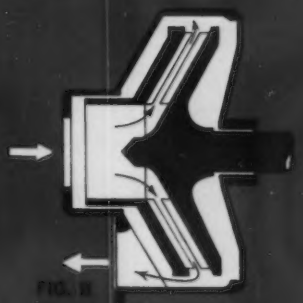


FIG. B

FREE DISCHARGE FOR DEFIBERING

HOW THE REVOLUTIONARY MORDEN SELF-ALIGNING SYSTEM ASSURES PRECISION

In conventional flat disc design, it is diffcult to maintain alignment because of shaft deflection and bearing clearances. Morden's creative engineering has overcome this disadvantage in disc refining through semi-conical plate design. The new design assures plates are maintained in perfect relationship to one another. This feature makes rotor and stator plates align automatically.

Mordenize › Send for information on Morden's complete line of pulpers, refiners and jordans . . . the standard of high quality in the industry.

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MACHINES COMPANY
3420 S. W. MACADAM AVENUE • PORTLAND, OREGON

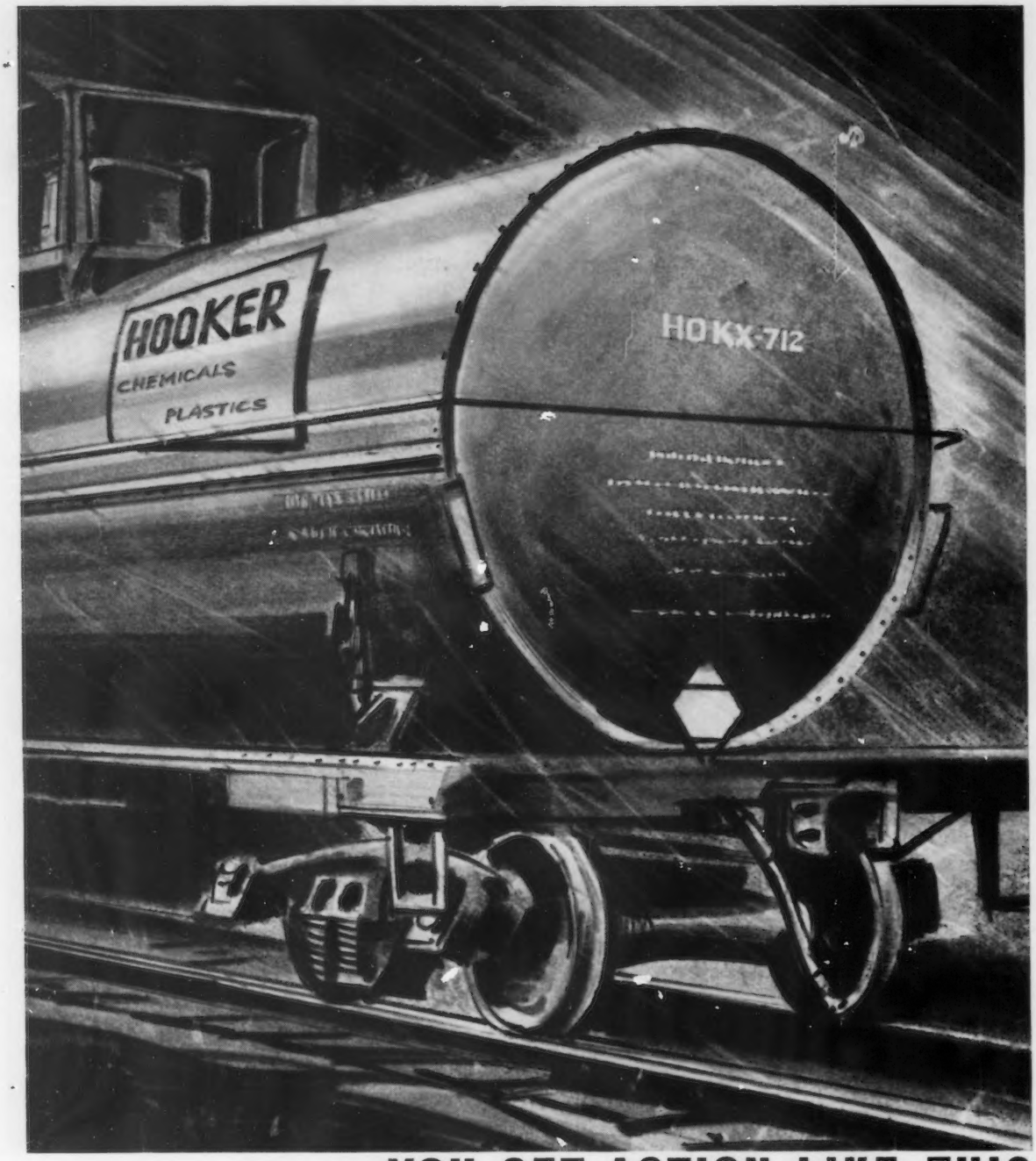
UNITED STATES REPRESENTATIVES: Midwest, Dan B. Chapman, Appleton, Wis. • Northeast, Orton Corporation, Fitchburg, Mass.

COMPARE THESE FEATURES WITH THOSE OF ANY OTHER DISC REFINER

Once you have checked these Morden features, we are sure you will agree Morden has made a major contribution in modern stock preparation:

1 High production with precision treatment.
2 Low power per ton of production.
3 500 to 700 connected horsepower.
4 Easily adapted for defibering or refining.
   a. Reverse flow, self-pressurizing for refining. (See Fig. A above.)
   b. Free discharge for defibering. (See Fig. B above.)
5 Variety of plate designs and materials.
6 Precise plate adjustment.
7 Standard bearings and coupling.
8 Low maintenance.

Before you order another machine for stock preparation, see all the data on DISCO-FINER. Write for detailed information about the advantages of the Morden self-aligning design.



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YOU GET ACTION LIKE THIS

One Saturday morning the telephone rang at one of our sales offices. On the other end was a desperate mill superintendent who was about to run out of sodium chlorate. Even though he wasn't one of our regular customers, we had a tank car rolling toward his mill within *minutes* of the time his call was completed, thus averting a costly shutdown. Unusual? Of course. But our record for "on time" deliveries is very good. We would like to prove this to you—with sodium chlorate, caustic soda, or chlorine.

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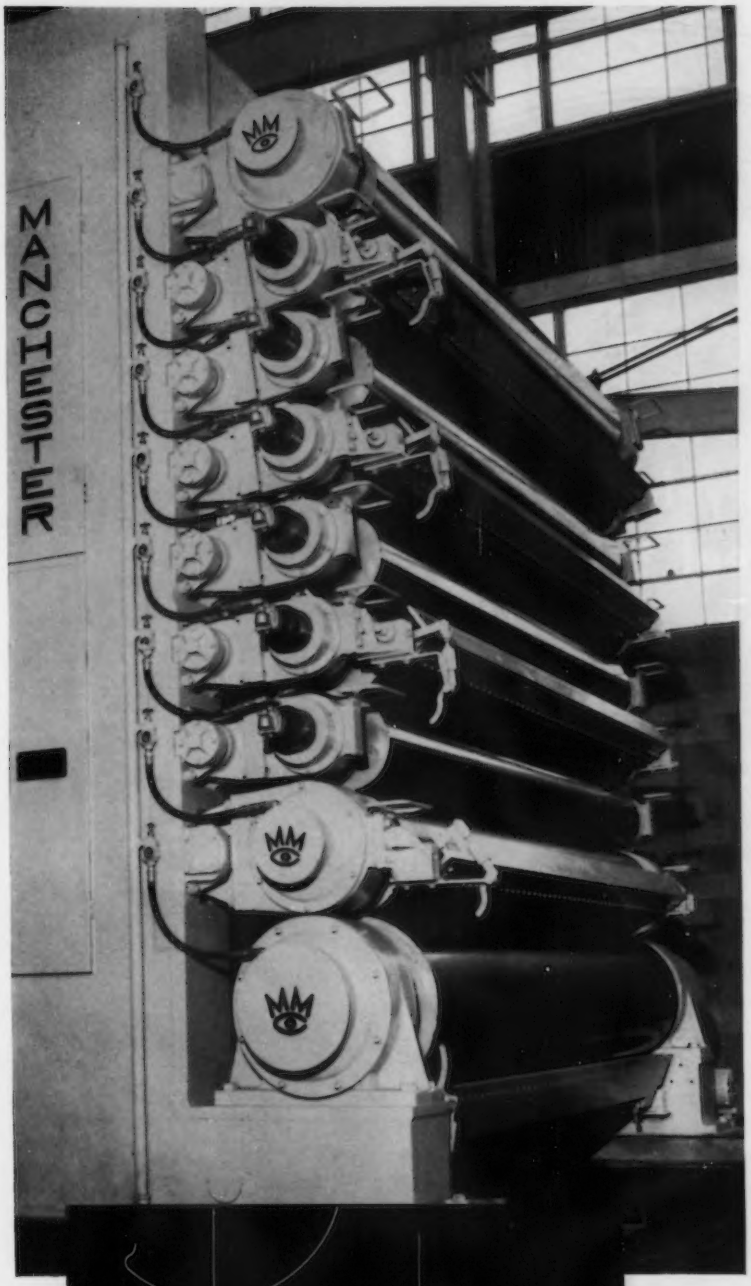

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Many progressive manufacturers of paper mill machinery, like The Manchester Machine Company, rely on Lodding's specialization in doctoring to complement their own manufacturing skills. So, besides serving the mills direct, Lodding acts as sub-contractor to the machine builders.

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In sub-contracting, as always, Lodding stands squarely behind every doctor, assuming full responsibility for its workmanship and performance. Each is expressly designed for the exact roll on which it is to be mounted.

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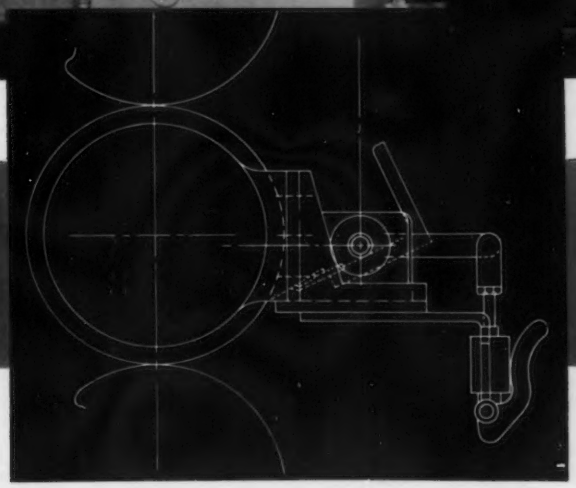

Get in touch with your nearest Lodding sales representative for full information.

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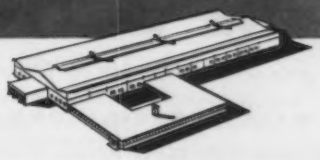

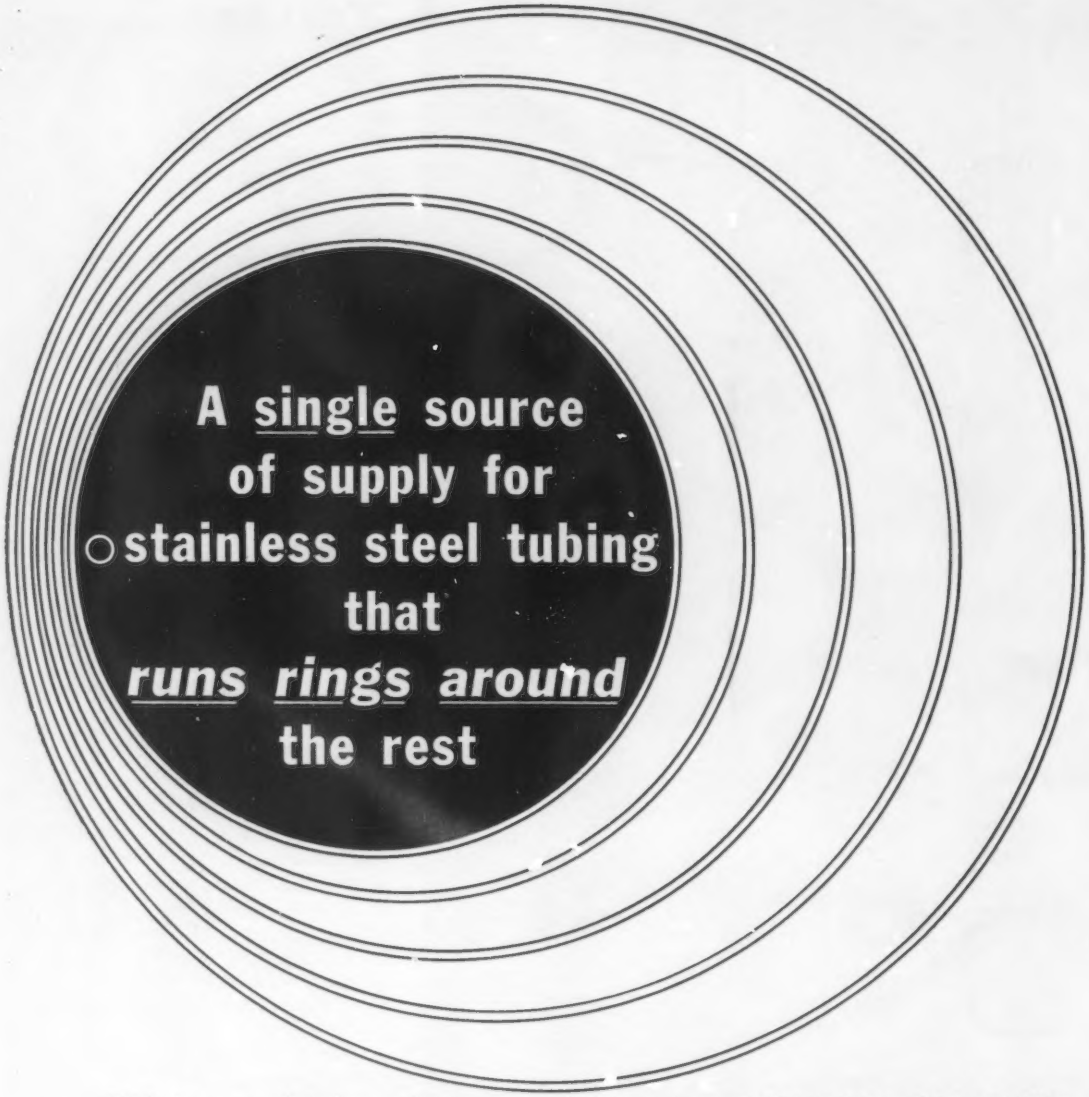

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Lengths up to 60 feet. ⅛" to 6⅝" O.D. Wall thickness from .008" to .154" depending upon O.D. and application.

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Courtesy of the Metropolitan Museum of Art

Too late...

for Huber clays to help **this** paper maker

This unknown Egyptian papyrus maker for the Pharaohs made "paper" of bullrushes found on the Nile River's banks. A cross-woven mat of reeds was wetted, pressed, dried and burnished smoother with shells. The result was paper—of a sort.

Upon such surfaces the Egyptians recorded their pictographic hieroglyphics. Thanks to the dry north African climate, the great Harris Papyrus—133 feet long and 16¾ inches wide—remained intact and survives in the British Museum. For the needs of those distant times, such papyrus was "good enough".

Papyrus would rate low on the modern papermaker's quality scale. But Huber filler and coating clays would improve it, if anything could. For these famous quality-controlled clays are used the world over to give many coarse grade pulp papers a quality printing surface, and to give better papers a superlative finish—at lower cost than other coating materials. Viscontrol — a patented Huber process, guards Huber coating clay uniformity.

True, it's over 3000 years too late for Huber clays to help the unknown Egyptian paper maker in our picture. But for you modern live-wire papermakers there's a great deal we *can* do. Write us about your papermaking problems—today.

HUBER **J. M. HUBER CORPORATION,** 630 Third Avenue, New York 17, N.Y.

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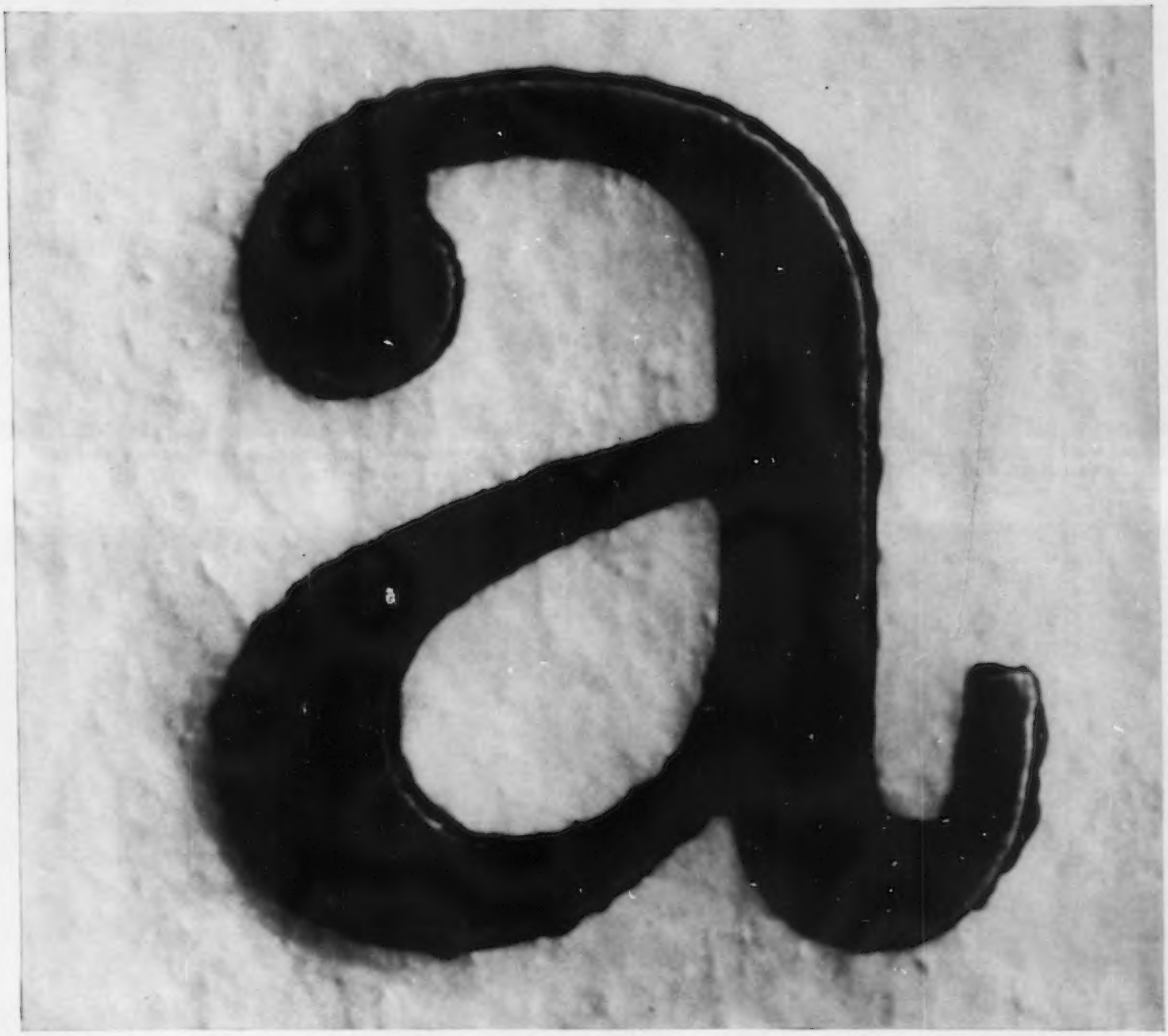


12-pt. Garamond type impression printed originally on paper coated with Dow Latex 630 and magnified approximately 85 times to show paper surface uniformity. The uniform impression and ink distribution greatly improve print quality.

Now . . . better control of paper uniformity with **NEW DOW LATEX 630**

- **Excellent Mechanical Stability!**
- **Superior Pick Resistance!**
- **Excellent Starch Compatibility!**

Three good reasons why new DOW LATEX 630 can help you make . . . help you sell . . . better paper than ever! You'll find it far easier to produce uniform paper with smoother, more pick resistant coatings made from Dow Latex 630. Paper surfaces provide a new high in printability, reproducing both illustrations and type with remarkable sharpness and realism. Dow Latex 630 will give you the coating quality you usually associate with higher cost!

Contact Dow now for detailed information to help you make the most of new DOW LATEX 630! Write to THE DOW CHEMICAL COMPANY, Midland, Michigan, Coatings Sales Department 1934DP6-27.

THE DOW CHEMICAL COMPANY · MIDLAND, MICHIGAN

Actual tests begin by adding radioactive plastic "chips" at chip feeder. Here, a single "chip" is held by vacuum tool.

"Chips" are timed as they enter the top of one of St. Regis' Kamyr continuous digesters.

Thermocouple recorder develops a complete record of temperatures at key points throughout digester.

When "chips" finally reach bottom of digester, crews are alerted to quickly recover them.

Now! St. Regis nuclear research probes

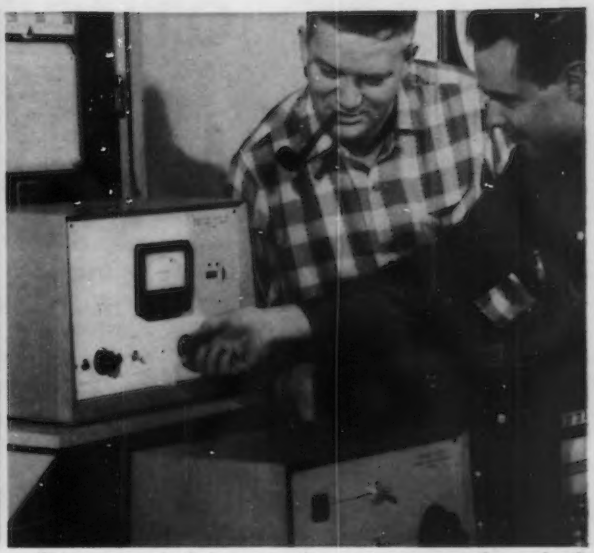
"What actually goes on inside the thick, windowless, steel walls of continuous pulp digesters?"—that's an extremely complex question the pulp industry has never been able to answer completely.

Now St. Regis® better understands the answer—thanks to recent nuclear research studies performed by the Commercial Products Division of Atomic Energy of Canada, Ltd. Conducted by these top Canadian nuclear scientists, the unique research project used thermocouples and nearly a hundred Geiger counters to blanket the huge Kamyr continuous digesters which produce Alberta Hi-Brite pulp.

Then radioactive oxide of Lanthanum-140 was encapsulated into special plastic containers that looked like ordinary poker chips. Lanthanum-140 oxide was selected as the tracer because it had adequate strength to penetrate the thick digester walls . . . and because its radioactive charge lasts a relatively short time.

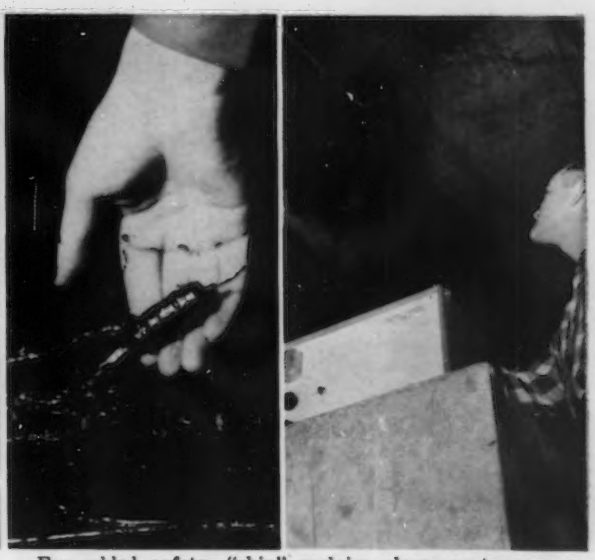
These hot "chips" were fed into the normal chip flow one at a time. Each chip's course was traced by Geiger

Path of every "chip" is carefully traced throughout digester. Here, a hot "chip" is located near top of the digester.



This automatic Geiger counting system traces the path of each "chip" through digester.

"Chips" are recovered with hand tools as they reach the Jonsson knotters, then returned to lead-lined storage vessels for safekeeping.



For added safety, "chip" reclaim alarm systems were spotted along knot conveyor and pipe to black stock storage tank. *Every* hot "chip" was recovered throughout test.

the "hidden secrets" of pulp digesters!

counters and recorded with special electronic systems. At the same time, thermocouples developed temperature data that could be correlated with path of chips.

While the actual on-site research work took just under five days, months of advance preparations were required; in addition, it will take many more months to fully analyze and interpret the data gathered. Armed with this new data, Hinton Mill personnel expect to control the cooking of the Kraft Pulp more closely than has ever before been possible in commercial operation.

The only such research project in North America, this is one more example of St. Regis' continuing effort to improve what many say is the world's finest pulp.

Get the full story on Alberta Hi-Brite Bleached Sulphate Pulp and the advantages it offers you. St. Regis Paper Company, 150 East 42nd St., New York 17, N. Y.

KRAFT DIVISION **St.Regis** PAPER COMPANY

HOW DO OTHER MILLS SOLVE THEIR PUMPING PROBLEMS?

1 **Glassine and grease-proof papers.** R-W Paper Company makes them for wrapping bacon, butter, hams and the like. Because of dependability in operation, R-W engineers specified Goulds pumps. Over a score of Goulds centrifugal pumps handle paper stock, hot and cold water, and waste water for various services at the plant in Longview, Washington.

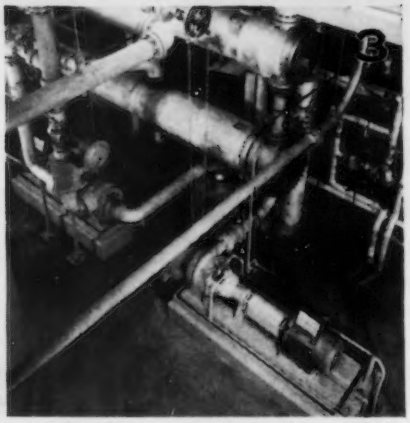
2 **Marathon Southern Corporation uses over 100 Goulds pumps.** Model 3450's for black liquor. 3405's and 3420's for white water and liquor. 3135's for stock. 3420's for fan service. 3189's for rosin size emulsion. The Goulds line is broad. It offers you a pump to solve *any* pulp and paper pumping problem.

3 **Continuous digester—a real rough pumping service**—handles hot, corrosive, abrasive liquids at Hammermill Paper Co. To meet continuous digester's critical demands, Hammermill chose Goulds heavy-duty process pumps. Advantages? Extra-thick casings, water-cooled bearings, fully-open impeller are some. There are more. Write to Goulds for the full story.

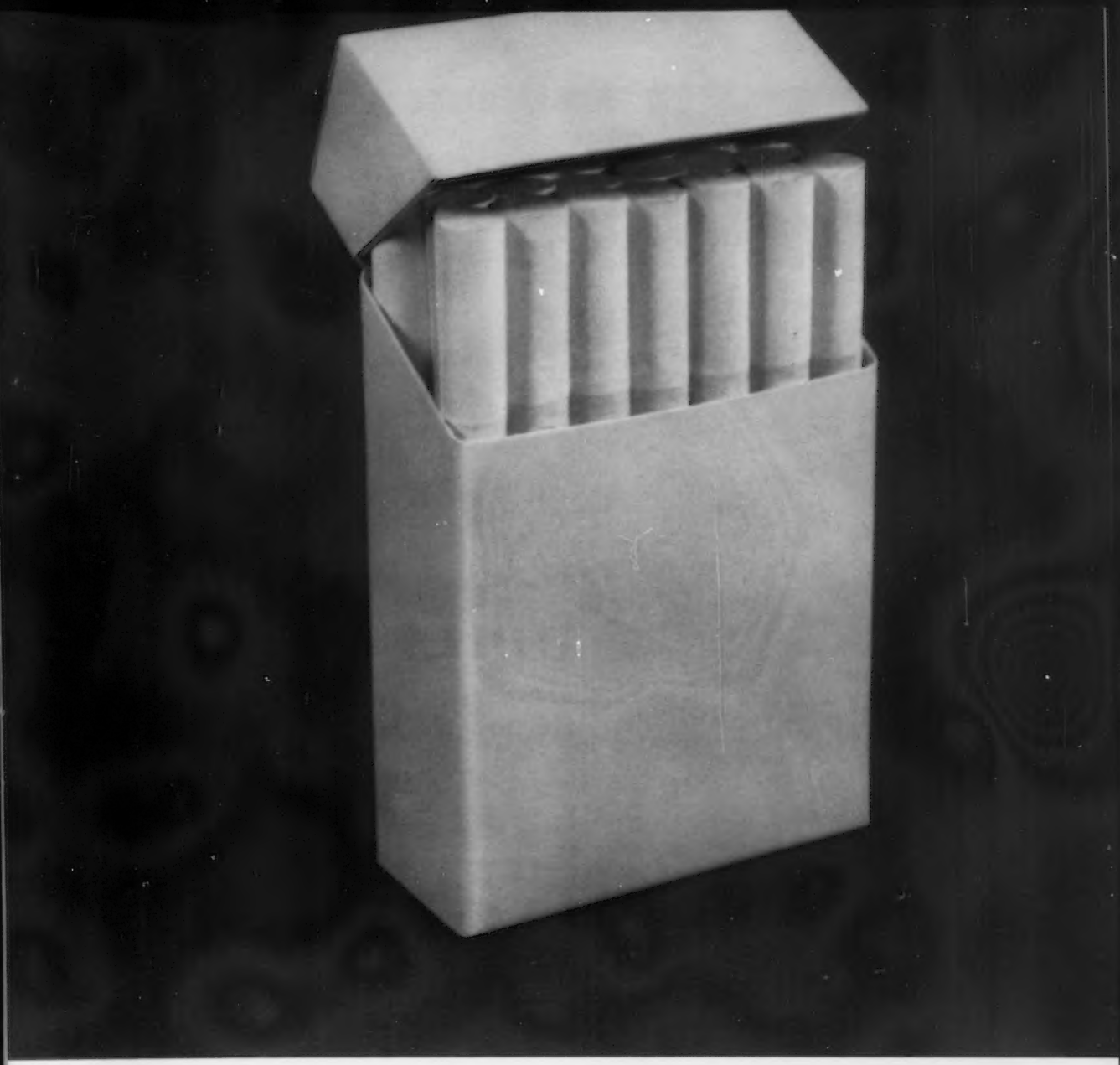
4 **24-hour delivery protects $600,000 investment.** Battenville Paper Mills Inc. needed ultra-fast delivery of a pump for a new paper machine. They telephoned Goulds long distance at 11 a.m. on Thursday, had their pump at 1 p.m. Friday. Could be a moral here. When you're in a spot—call Goulds.

5 **Paper quality improved by cleaning.** The cleaner must receive the 1% white water at high pressure. For continuous operation on this tough service, Michigan Paper Company's engineers selected a Goulds 8″ Model 3405 double suction pump.

Let us help you with your pumping problems. Pumps are our *only* business. Chances are we can save you time and money. Goulds Pumps Inc., Department PT-60, Seneca Falls, New York.



GOULDS PUMPS



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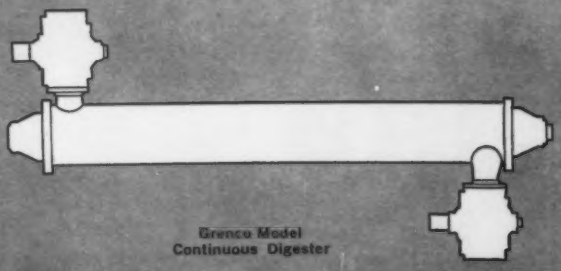
Batch Cooker



Grenco Model
Continuous Digester

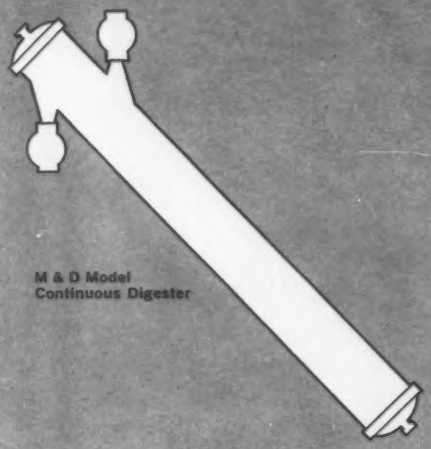
Bauer DIGESTERS

A Complete Line for All Cooking Requirements

Bauer's modern line of digestion equipment is engineered specifically to help you meet modern market demands.

Featuring automatic operation, accurate control and high efficiency, this equipment includes the Rapid Cycle batch cooker and two types of continuous digesters—the Bauer M & D model and the Bauer-Grenco model. Both continuous models are equipped with the famous Bauer-Grenco rotary valve. Optional electronic controls assure maximum uniformity in any type process.

Bauer is the only supplier that can offer you, on an impartial basis, the type digestion equipment best suited to your particular needs. For more details, ask for Bulletin P-30.



M & D Model
Continuous Digester

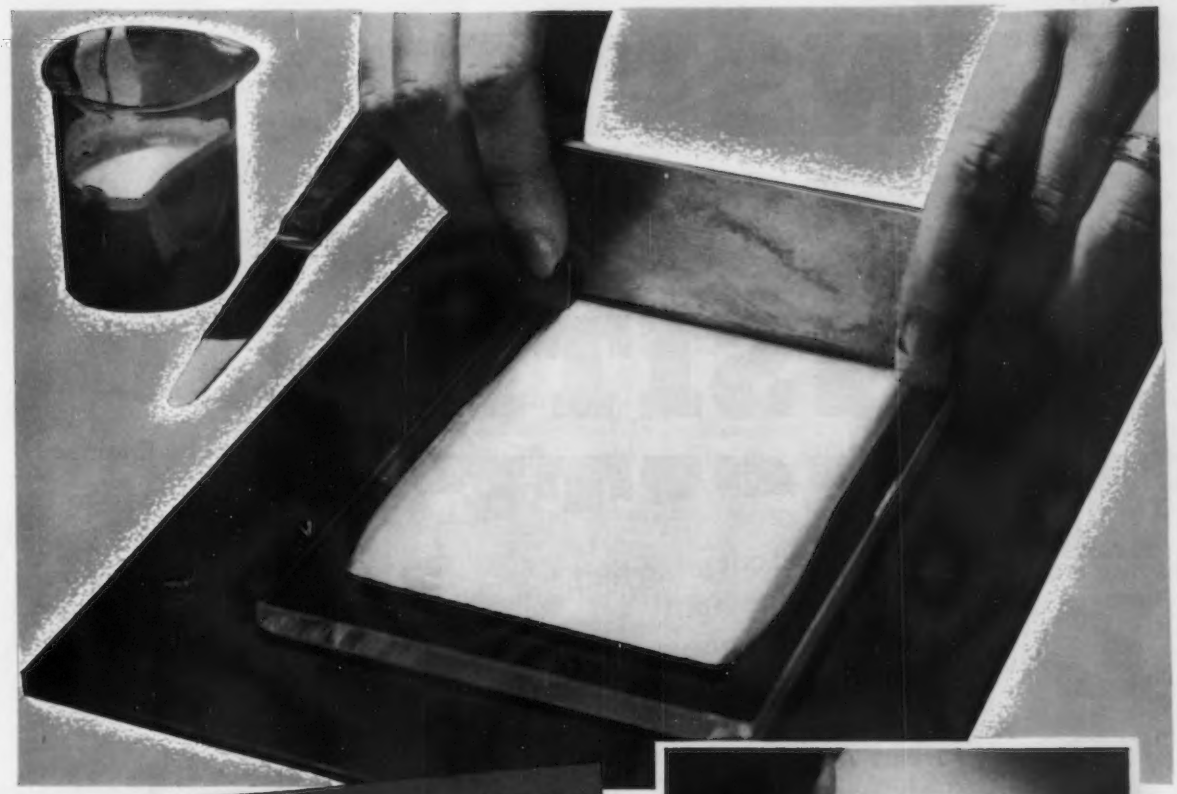
Electronic Controls (Optional)

Grenco Rotary Valve
for Continuous Digesters

THE BAUER BROS. CO.

1706 SHERIDAN AVENUE
SPRINGFIELD, OHIO

From the Paper Research Laboratory of The New Jersey Zinc Company
ONE *of a Series of Test Procedures on Horse Head Titanium Dioxide*



FREQUENCY OF AGGREGATES

The relationship of frequency of aggregates in pigments to smoothness and opacity of paper coatings is a comparatively new but important study under way at the laboratories of New Jersey Zinc.

Out of this and other phases of the research program on paper coatings is expected to come new knowledge which can be applied to the development of new titanium dioxides with new properties for new and better coated paper products. Also, it will serve as your assurance of the dependability of HORSE HEAD titanium dioxides.

Drawdowns of coating colors on glass plates placed over a light box are studied for frequency of pigment aggregates and its relationship to coating smoothness and opacity.

HORSE HEAD® TITANIUM DIOXIDE

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Now . . . a roll covering that helps you solve **Heat** and **Corrosion** problems

Its name: **DENSITE®**

It resists temperatures up to 300°F and gives exceptionally long life by resisting chemical attack, particularly from the furnish. DENSITE also resists abrasion. It can be doctored.

Mill experience shows DENSITE to be a material that can be easily reground or repaired, if damaged.

Successful DENSITE installations include these types of rolls: table, felt and wire, spreader, wet press, breaker stack, guide, dryer felt.

Data Page D-1 gives complete technical information about this S-W development. Ask your S-W Sales Engineer for a copy, or write to —

STOWE-WOODWARD, INC.

Your S-W Sales Engineer

has facts about the operation of DENSITE in many a mill. Tensile strength, rigidity, and abrasion resistance are some of the subjects we have investigated. For specific data about the abilities of DENSITE, ask him for the facts.

STOWE-WOODWARD, INC.

Newton Upper Falls, Mass.
Neenah, Wisconsin
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HUNTINGTON RUBBER MILLS, INC.
Seattle, Washington
Portland, Oregon
Port Coquitlam, British Columbia, Canada

Trends

Jan.-May Paper And Board Up 4%

Paper and board production for the January-May 1960 was 14.63 million tons, an increase of 4% above the same period last year, according to an APPA estimate. Paper output was 6.63 million tons, up 7½%; paperboard was 6.69 million tons, up 2%, and construction paper and board was 1.31 million tons, off 2%.

Newsprint Production Continues Climb

Newsprint production in North America in May 1960 was 1.7% above May 1959. Shipments in May 1960 were 2.0% below shipments in the same month of 1959, according to the Newsprint Service Bureau. U. S. output was a new May high, 0.5% above last May. Canadian output was up 2.1% and shipments off 3.3%.

Folding Boxes Up for May

Dollar volume of folding cartons shipped in May rose 5.3% above the like month of 1959, according to the Folding Paper Box Ass'n. Tonnage during the month was 1.4% ahead of May 1959. $ volume for the first five months of 1950 is 2.3% over the same period of last year, but cumulative tonnage is off fractionally from 1959.

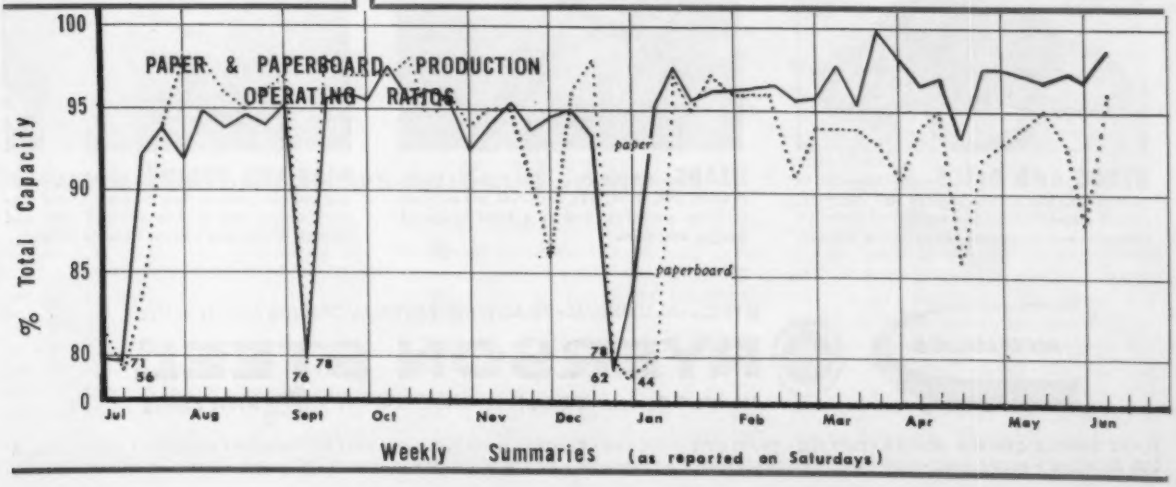
Pulp Import Picture Mixed

Total U. S. wood pulp imports in short tons, based on Bureau of the Census data, for January-April 1960, in comparison to January-April 1959 are as follows:

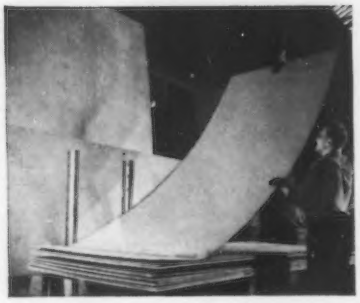
	Jan.-April 1960	Jan.-Apr. 1959	% Change
Canada	657,286	646,842	+ 2
Sweden	66,343	102,032	—35
Finland	35,563	39,322	—10
Norway	9,906	5,781	+71
TOTAL EUROPE ...	111,883	147,135	—24
TOTAL WORLD	771,293	796,018	— 3

Pulp and Paper Exports Increase Substantially

Pulp and paper exports for the 1960 January-April period were well above the same period in 1959, based on preliminary data from the Bureau of the Census. Pulp exports were up 44.2%, increasing from 196,643 to 283,484 tons; paper, paperboard and paper products increased 10.1% from 269,230 to 296,381 tons; paper increased 2.6% from 110,846 to 113,690 tons; paperboard 21.6% from 112,911 to 137,296 tons.

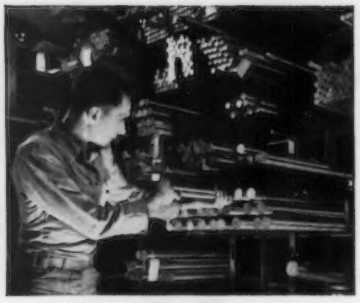


BUYERS' GUIDE . . .
to Ryerson service on stainless



PLATES—Available in 9 analyses including plates to Atomic Energy Commission requirements and to ASTM specifications for code work. Also low carbon types for easy welding.

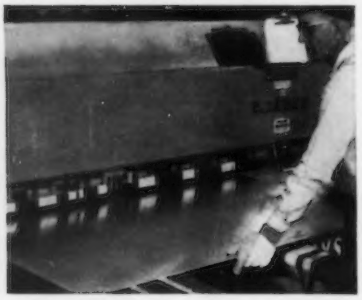
SHEETS—11 analyses of Allegheny stainless sheets in stock including nickel and straight chrome types. Also extra wide sheets to reduce welding costs, expanded and perforated sheets.



BARS AND ANGLES—Rounds, squares, flat's, hex's and angles in 8 types including free-machining bars with both analysis and mechanical properties controlled.

HELIARC CUTTING available on request. Cleaner, smoother cut edges. Better machining because of minimum contamination and distortion. Less carbide precipitation.

TRUE-SQUARE ABRASIVE CUTS. —Stainless plates to 12' x 25' cut true square on abrasive disc machine. Length and width tolerance plus or minus 1/32".



SHEARING—Accurate cutting of stainless sheets and light plate to the industry's tightest specifications. Shear hold-down clamps padded to protect sheet finish and flatness.

RINGS AND DISCS—Machine cut to your order. This service assures size accuracy, smooth edges, flatness and unaffected corrosion resistance—a lower-cost, ready-to-use product.

HEADS—A.S.M.E. flanged and dished heads in types 304, 304L, 316 and 316L are on hand in large quantities, and in a wide range of gauges and sizes.

PIPE AND TUBING—Light wall, standard and extra heavy pipe, ornamental and regular stainless tubing. Also screwed type and welding fittings and Cooper stainless valves.

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PAPER TRADE JOURNAL

WEEK OF JUNE 27, 1960

Propose Merger of Bloomer Bros. Into Riegel Paper

The boards of directors of Riegel Paper Corp. and Bloomer Bros. Co. have signed an agreement proposing the merger of Bloomer into Riegel. Riegel is a leading producer of flexible packaging materials, bleached paperboard, pulp, folding cartons, and specialty papers; Bloomer Bros., located near Rochester, N. Y., is a boxboard and box manufacturer.

Following stockholder approval and completion of the merger, Bloomer would be operated as a division of Riegel Paper Corp.

F. S. Leinbach, Riegel president, said that "the Bloomer merger is another step in Riegel's program of developing more manufacturing integration from tree to final package." He added that Bloomer "will strengthen Riegel's position in such markets as ice cream and egg packaging and add types of cartons not presently manufactured by Riegel." Bloomer now uses considerable quantities of the kinds of bleached-kraft paperboard and pulp produced by Riegel's Carolina division, he stated.

Earlier this year Riegel acquired Bartelt Engineering Co., Rockford, Ill., specialty packaging equipment manufacturer.

Bloomer Bros. has its headquarters and plant at Newark, N. Y., where it has a cylinder board mill. Its principal products are ice-cream cartons, manila-lined egg cartons, and other cartons for use with liners or bags.

FTC Attacks Union Bag-Camp Merger of 1956

The Federal Trade Commission issued a complaint challenging the 1956 merger of Union Bag & Paper Corp. and Camp Mfg. Co., Inc., and subsequent acquisition of four box companies.

The FTC said merger of Union Bag and Camp into Union Bag-Camp Paper Corp. violated the anti-merger provision of the Clayton Anti-Trust Act.

It also said that acquisition of the following box companies tended to endanger competition in the manufacture and sale of paper products in these 21 eastern and southeastern states:

Highland Container Co., of Jamestown, N. C., acquired on March 2, 1959.

Eastern Box Co. of Baltimore, purchased on April 9, 1959.

Allied Container Corp. of Hyde Park, Mass., acquired on January 10, 1957.

Universal Paper Bag Co. of New Hope, Pa., acquired on October 31, 1958.

The FTC gave UB-C 30 days to answer its complaint.

Newark Evening News to Build Mill

The Evening News Publishing Co. of Newark, N. J., has purchased an 11-acre tract in Garfield, N. J., as the site of its proposed newsprint mill. The newspaper is planning the mill to use chiefly deinked waste paper. One report is that old newspapers will be used in a process developed by the Evening News. Consulting engineers are Roderick O'Donoghue and Associates of New York City.

It has been reported that a large newsprint machine has already been ordered for this mill from Rice Barton Corp. but we have been unable to confirm this.

This mill would be the first modern installation for utilization of waste paper in the manufacture of newsprint. The deterrent in the past has not been technological feasibility but economics.

CIP To Spend $8 Million At Dalhousie Mill

Canadian International Paper Co. has announced that it plans a $8 million improvement program at its Dalhousie, N. B., newsprint mill.

The schedule includes immediate installation of a high yield sulphite system and construction of additional stock room at total cost of $2,500,000. The company will then begin a $5,500,000 program of paper machine improvements.

St. Lawrence Expanding Red Rock Mill

St. Lawrence Paper Corp. is borrowing $15 million, part of which is to be used at its Red Rock, Ont., mill.

During 1960-62, it expects to spend some $13 million at Red Rock to boost pulp and paperboard capacity. This would bring the kraft board machine capacity to about 700 tons daily, compared with 400 now.

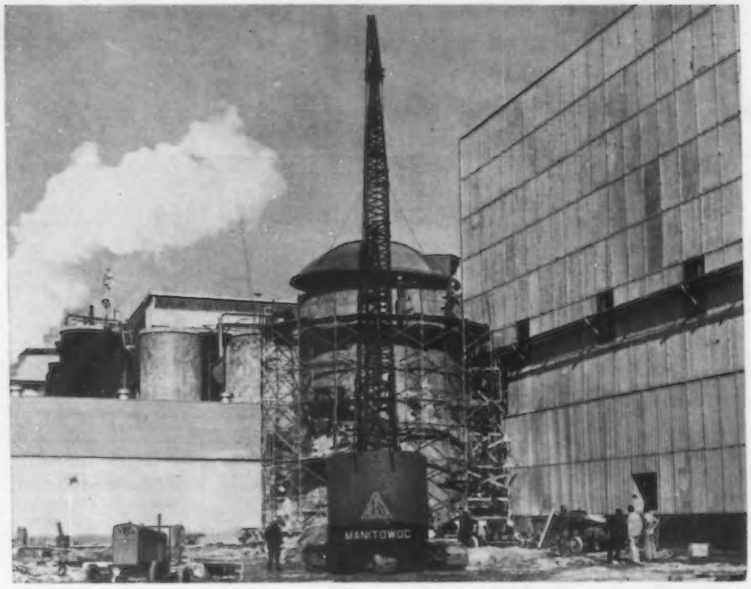
Bowater Carolina Borrows $25 Million

Bowater Carolina Corp., corporate entity for the Bowaters mills at Catawba, S. C., has arranged through Morgan Stanley & Co. to borrow $25 million from a group of insurance companies. Presumably this financing is for the new fine paper mill being constructed at Catawba.

New NSSC Mill To Start Up Next Summer

The new NSSC mill of the Menasha Wooden Ware Corp., being built by Rust Engineering Co. at North Bend, Ore., is scheduled to start up next summer.

The foundations for this new pulp mill and corrugating medium paper mill with auxiliary facilities are being built on sand compacted to an average depth of 20 feet. About 607 compactions will cover the foundation area of the buildings with compaction service being provided by the Vibro-flotation Foundation Co., a Rust subsidiary.



BROKE CHEST at Marathon Southern Corp., Naheola, Ala., has a 25 foot diameter, reinforced polyester cover, recently installed by Rust Engineering. The Kabe-O-Rap plastic cover, largest of its type ever used in the pulp industry, was manufactured by Metal-Cladding, Inc., North Tonawanda, N. Y. Six sections of the cover were glued and clamped together at the job site, then hoisted to the top of the broke chest at the new mill. Besides the fact that the cover is resistant to atmospheric conditions, there are also a material cost saving and the advantage of clean-out inspection of the tank without lighting facilities.

Cellulose Australia Awards B-C Contract for Major Expansion

Cellulose Australia has awarded to The Black-Clawson Co. a contract to supply an eight-cylinder paperboard machine and all of the necessary stock preparation equipment for an expansion program that will triple the production of the company's mill at Millicent, South Australia.

Present at the board approval meeting in Adelaide last week were Sir Tom Barr-Smith, chairman, and C. E. Piper, managing director, of Cellulose Australia, Frank T. Peterson, president of Black-Clawson, New York, and Barrie Dixon, deputy managing director of Black-Clawson International, London. All of the machinery will be built by Black-Clawson International at its Newport plant in England. Following installation, the new equipment will increase production of the mill to 60,000 tons per year of containerboard grades.

Cellulose Australia is a major supplier to the Australian packaging industry and is the only manufacturer of paperboard in South Australia.

"Clupak" Extensible Paper To Be Produced in Japan

Three of Japan's largest kraft paper companies, Chuetsu Pulp Industry Co., Ltd., of Tokyo, Daishowa Paper Mfg. Co., Ltd., Tokyo, and Tokai Pulp Co., Ltd., of Shizuoka Prefacture, have signed agreements with Clupak, Inc., to make Clupak extensible paper.

This brings to 15 the total number of major domestic and foreign companies now licensed to manufacture Clupak extensible paper under its specifications. In addition, the Clupak trademark is registered in more than 50 countries and patent rights perfected in 35 countries.

The extensible machinery for the paper will probably be made in Japan by Mitsubishi Heavy Industries, Reorganized, Ltd. The three companies will produce kraft papers on 136-inch, 145-inch, and 92-inch machines, with an annual capacity of 70,000 tons. It is expected that production by all three licensees will start by January 1, 1961.

Export-Import Bank Grants Loan to Venezuela

The Export-Import Bank has announced that a credit extension of $1.5 million has been authorized for C. A. Venezolana De Pulpay Papel (VENEPAL), in connection with the construction of a pulp and paper plant at Caracas, Venezuela.

The original credit was authorized in 1957, and amounted to $3.5 million for earlier construction of a paper mill. The new credit extension will be used to help complete construction of a pulp mill using bagasse.

Porritts & Spencer Buy Waterbury Felt Co.

The Waterbury Felt Co. of Skaneateles Falls, N. Y., has been purchased by Porritts & Spencer, Ltd., of Hamilton, Ont. The Waterbury Co., established in 1907, manufactures felts and jackets for pulp and paper mills. Porritts & Spencer, Ltd., manufacturer of papermakers felts for 152 years, has six mills in England and one in Canada.

Paper and Paper Board Production

The American Paper and Pulp Association reported the ratio of the United States paper production to mill capacity for the week ending June 11, 1960, at 98.6 per cent compared with 96.2 per cent revised, for the preceding week. The ratio was 95.6 per cent for the corresponding week a year ago.

The National Paperboard Association reported the paperboard production ratio for the week ending June 11, 1960, at 85 per cent, compared with 96 per cent for the preceding week and 98 per cent for the corresponding week a year ago. Week ending June 4 included the Memorial Day holiday.

(Detailed statistics on page 50)

(Above) Vickery RS Type Doctors have proved especially effective where blade changing is a problem or space is limited. Many mills have standardized on them throughout.

(Left) Vickery HI-Flex Doctors keep calender rolls continuously clean, smooth and shining. They may be oscillated if desired and may be provided with air lift control for quick, easy lifting of any one or all doctors from a conveniently located control panel.

To Be Sure Of Good, Profitable Doctoring On Every Roll

Standardize On VICKERY *Engineered* DOCTORS

The benefits of correctly selected, correctly engineered, correctly applied doctors are *high*. Their cost is *low*.

That is why it pays to equip your rolls with the doctors that are backed by unequalled experience in doctor design and engineered application — VICKERY DOCTORS.

The Vickery Doctor for any roll on your machine or stack will not only fit the roll but perform the service expected of it continuously and effectively under all conditions. Why not take advantage of Vickery Doctor engineering and application service?

BIRD MACHINE COMPANY

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REGIONAL OFFICES: EVANSTON, ILLINOIS
PORTLAND, OREGON • ATLANTA 9, GEORGIA

Canadian Manufacturers of Bird Machinery
CANADIAN INGERSOLL-RAND COMPANY, Limited, Montreal

PJT NEWS OF CONVERTERS

W. E. HAYNE (left) representing American Tag Co. accepts the Tag Manufacturers Institute Special Tag Award from George E. Phelps, TMI president, for a "gold plated" baggage tag made by American Tag for National Airlines.

Tag Institute Inaugurates 1st New Membership Drive

To expand further its services to the tag industry The Tag Manufacturers Institute has inaugurated a coordinated new membership drive, George E. Phelps, TMI president, announced to the membership at the recent TMI Spring meeting held at the Greenbrier, White Sulphur Springs, W. Va., June 1-3.

In addition to the New Membership activity, other projects covered at the Spring Meeting included a major tag production costing seminar presided over by D. F. Prince, Dennison Manufacturing Co., who commented on those facets of tag costing included in manufacturing and selling and administrative overhead.

P. S. Faude, pro-tem chairman of the Merchandising Committee, joined with Mr. Phelps in presenting three awards for unusually effective tags to the following companies:

Systems Tag Award, won by Sterling Tag Co., Cleveland, Ohio.

Special Tag Award, won by American Tag Co., Inc., Belleville, N. J.

Informative Tag Award won by Dennison Manufacturing Co., Framingham, Mass.

Michael B. Weir, TMI counsel and a member of the law firm of Dunnington, Bartholow and Miller, addressed the membership on recent changes in sales and use taxes by various states, and advised members that the Internal Revenue Service had recently published a "sample" expense account reporting sheet as a guide to taxpayers under the revised expense account reporting regulations.

The next general meeting of the Tag Manufacturers Institute will be held in Washington, D. C., on October 5 and 6, 1960.

U.S.E. Reorganizes Board; Names Jennings President

The board of directors of United States Envelope Co. has been reorganized by West Virginia Pulp and Paper Co. which owns 52 per cent of the voting stock.

Convening two days after a special stockholder meeting had voted not to adopt a proposed merger between U. S. Envelope and Hammermill Paper Co., eight new members were elected to the U.S.E. board to replace members who had tendered their resignations, including Eldon V. Johnson, chairman, and Albert F. Duval, president. Three executives have expressed a desire to continue to serve and are remaining on the board. They are Joseph A. Fairchild, senior vice president; Arthur F. Peterson, vice president, and Magnus F. Peterson, vice president and treasurer.

New members of the board, all associated with West Virginia Pulp and Paper Co., include: David L. Luke, president; David L. Luke, 3rd, executive vice president, commercial; John D. Cowan, executive vice president, operations; Wiley L. Jennings, vice president, sales; John A. Luke, manager, Fine Papers Division, Luke, Md.; E. Nobles Lowe, secretary and general counsel; Lawrence J. Kavanagh, treasurer, and J. William Robinson, attorney.

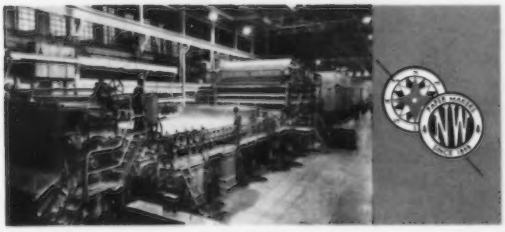
Wiley L. Jennings was elected president of U. S. Envelope, succeeding Mr. Duval, who had expressed a desire to resign immediately. No successor was chosen to fill the office of chairman of the board, which Mr. Johnson resigned June 1. Hans P. Stibolt of Springfield, Mass., general manager of sales for U.S.E., was elected vice-president, sales. All other present officers will continue to serve, although Magnus F. Peterson, vice president and treasurer of U.S.E., has advised the company that he wishes to retire under terms of his employment contract not later than August 1. It was indicated that a man from the West Virginia organization would be proposed to succeed Mr. Peterson.

ARTIST'S RENDERING of new 200,000 square-foot plant of Columbia Corrugated Container Corp., to be built in Syosset, L. I. Located on an 11-acre tract, the new plant will double Columbia's present manufacturing facilities in Hicksville, L. I., to make it the biggest corrugated package-maker in the East. New structure will be the second-largest one-story building on Long Island.

O. R. CHRISTENSEN

Dryer Section, No. 6 Fine Papers Machine, the Northwest Paper Company, Brainerd, Minnesota

The Northwest Paper Company



Installation and successful start-up of No. 6 machine completed the current expansion and renovation program at the Northwest Paper Company's Brainerd, Minnesota, mill. This 200″ Beloit Fourdrinier machine has increased daily production of the famous Northwest Pedigreed Papers from 80 to over 200 tons a day. For further details and views, please turn the page.

details of Northwest's new No. 6 machine at Brainerd, Minnesota Designed to run in the 2000 fpm range, this 200″ Beloit machine produces Northwest's high-grade writing, printing, and converting papers. Addition of No. 6 machine has tripled production at the Brainerd mill. **(a)** Smoothing press following third suction press; **(b)** straight-through press featuring automatic suction pick-up and sheet-transfer arrangement; **(c)** Beloit pneumatic reel designed to wind 60″ parent rolls; **(d)** motor-operated Beloit streamflow valve; **(e)** Jones-Beloit benchboard controls at press position; **(f)** wet-end Beloit differential-drive units; **(g)** twin open-side Beloit calender stack.

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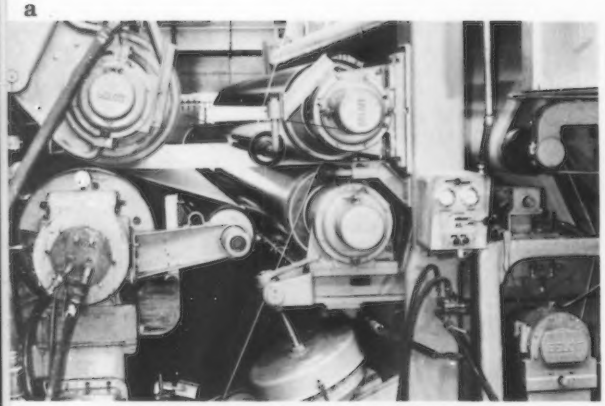

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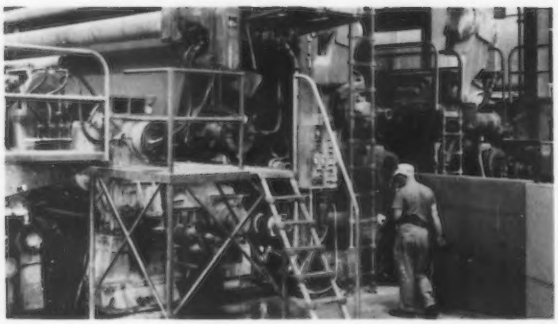

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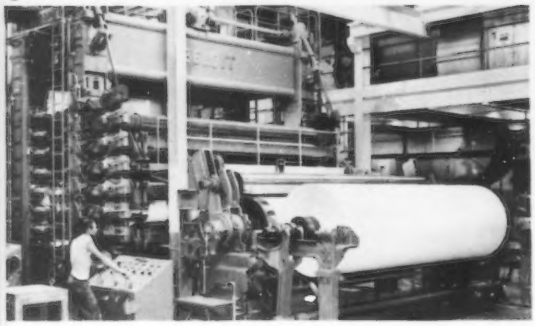

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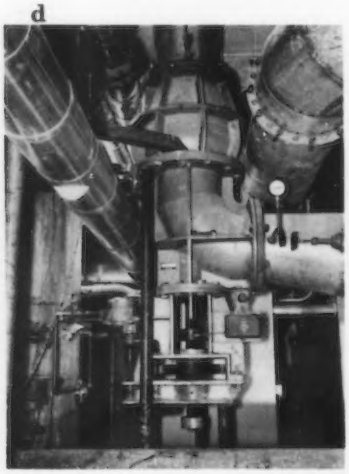

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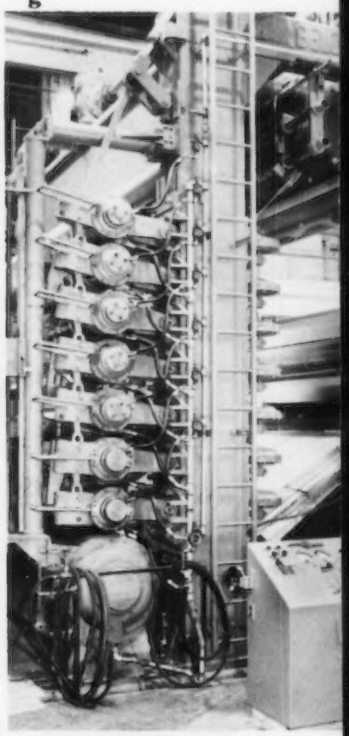

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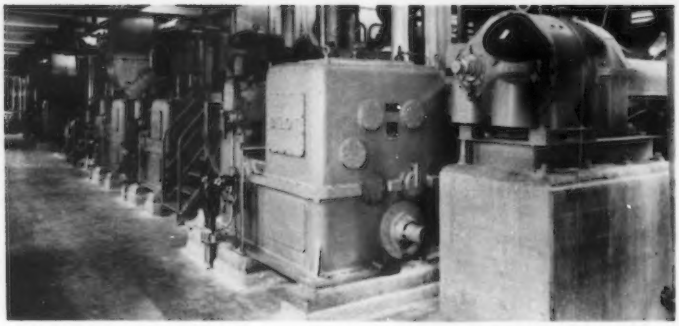

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BELOIT IRON WORKS PAPER MACHINERY BELOIT, WIS. U.S.A.

BELOIT

PAPER MACHINERY

your partner in papermaking

PAPER PEOPLE

R. J. Sund

D. A. Snyder

Marathon Man Heads American Can

Roy J. Sund, was elected president of American Can Co. on June 14. He formerly headed the company's Marathon Division.

He was elected to the company's board of directors on December 3, 1957, when the former Marathon Corp. of Menasha, Wis., joined American Can. Named vice president and general manager of the company's Marathon Division the following week, he became a vice president of American Can on March 1, 1958, and was assigned to executive department duties in New York in January 1960.

Born at Appleton, Wis., on February 19, 1904, where he was graduated from Lawrence College in 1927, Mr. Sund has spent his entire professional career with Marathon. He began in 1923 as a purchasing and traffic clerk, leaving two years later to complete his college education.

After rejoining Marathon in 1927, he worked successively as a sales correspondent, sales and order supervisor, plant manager and converting plant production manager until he was elected vice president in charge of manufacturing in 1946. Named to the former Marathon Corp.'s board of directors in 1948, he became its executive vice president in charge of manufacturing in 1952. He was elected executive vice president of that company on October 1, 1957, two months before American Can acquired Marathon.

Donald A. Snyder, elected a vice president of American Can and general manager of its Marathon Division, for the past year has been assistant general manager of Marathon. Before that, he was food packaging division vice president for Marathon.

He joined the sales promotion department of Marathon Corp. in June 1929. He served successively as a sales representative and as manager of various packaging industry sales areas until he was named manager of Marathon's food packaging sales division in December 1942. He became director of sales for that company in July 1946 and two years later was elected vice president in charge of sales. In November 1952 he was named vice president of Marathon's food packaging division, the post he held when he became vice president and assistant general manager in July 1959.

Westvaco Names Dalheim To New Post

Stuart A. Dalheim has been promoted to a new position with West Virginia Pulp and Paper's Bleached Board Division in Covington. His new post will be technical assistant in the pulp mills department.

For the past four years, Mr. Dalheim has been a project leader with the technical service department. In this post he directed the efforts of engineers working on special problems in the paper mill, pulp mills, recovery and other departments. He holds a master's degree in pulp and paper technology from New York State College of Forestry at Syracuse. Upon completion of his studies in 1955, he joined the Covington organization as a technical service engineer.

Wyatt Named Weyerhaeuser VP

Lowry Wyatt, director of personnel for Weyerhaeuser Co., was elected a corporate vice president at a meeting of the company's board of directors.

Formerly with the Gerber Products Co., Fremont, Mich., the new vice president joined Weyerhaeuser November 15, 1957. He began his career with Gerber Products in 1940, later becoming personnel manager and assistant to the vice president in charge of production and research. He held the position of general manager, manufacturing, at the time he joined Weyerhaeuser Co.

W. D. Kerr

Fraser Appoints New R&D Director

W. D. Kerr has been appointed director of research and development —pulp, at the research laboratories of Fraser Companies, Ltd. Mr. Kerr, who has been supervisor of the pilot plant in the laboratories, succeeds B. J. Trevelyan who recently resigned from the company to assume duties with another firm.

A graduate of the University of Toronto with honors in chemical engineering in 1950, Mr. Kerr entered the employ of the Pulp and Paper Research Institute of Canada, Montreal, in 1953 as a project supervisor in the chemical pulping division, becoming in time chief of the operations group of the division.

Mr. Kerr joined Fraser Companies, Ltd., in 1958 as supervisor of the pilot plant in the research laboratories at Atholville where he now assumes his new duties.

J. C. Enevoldsen

A. J. Saarikko

Celgar Appoints Three at Castlegar

Gunnar Selvig

Celgar, Ltd., has announced the appointment of Jens C. Enevoldsen, chief project engineer, Aaro J. Saarikko, maintenance superintendent, and Gunnar Selvig, wood preparation superintendent, for its new bleached kraft pulp mill at Castlegar, B. C.

Educated in Denmark, Mr. Enevoldsen received B.S. and M.S. degrees from the University of Copenhagen. He was discharged from the Royal Danish Navy as a lieutenant after five years of service. He came to Canada in 1951 and worked in the pulp mills at Woodfibre and Port Alice prior to joining Celgar as project engineer last July.

Aaro J. Saarikko received a technician's degree from the Technical Institute Industrial School at Turhu, Finland, and was discharged from the infantry as a lieutenant after five years of service. Since leaving Finland in 1952 he has worked for P. A. Shipbuilding Co., Ltd., at Port Arthur, Ont., Irving Pulp & Paper, Ltd., Lancaster, N.B., Kamyr, Inc., Hudson Falls, N. Y., and Eastern Corp., Lincoln, Me. He joined Celgar in August 1959 as a project engineer.

Gunnar Selvig studied agriculture and forestry in Oslo, Norway. He has been involved in general construction work since coming to Canada from Norway in 1939, and joined Columbia Cellulose in April 1949 on the construction crew. He became mill woodroom and yard supervisor in January 1951. Mr. Selvig has transferred from Prince Ruppert to become Celgar's wood preparation superintendent.

Scott Announces Mobile Staff Changes

James G. Moore, currently chief project engineer in charge of the construction phase of the expansion project now in progress at Scott Paper Co.'s Mobile plant, has been named construction manager of Scott's staff engineering department.

In his new position, Mr. Moore will be responsible for the construction activity of all projects of the staff engineering department, including the expansion now under way at Mobile. He will continue to maintain his headquarters in Mobile until the completion of the multi-million dollar building program, scheduled for late spring, 1961.

Appointment of Albert L. Wiley as technical director for Scott Paper Co.'s Southern Division has just been announced. In his new capacity, Mr. Wiley will direct all technical activities at the Mobile plant. A 1935 graduate of North Carolina University, he comes to the Mobile plant from Regal Paper Co at Acme, N.C.

In other personnel changes at Scott Paper's Mobile operations, Richard S. Bean, long-time construction engineer with Scott, has resigned to accept an engineering position with Rust Engineering Corp. in Birmingham, Ala. Paul C. Hanson, Jr., has been named technical assistant in the technical control-kraft department of the Southern Division, where he will be directly responsible for control of process chemicals. Mr. Hanson joined Scott in 1952 as a graduate chemist in the Mobile bleach plant. He was made a head shift paper chemist in the pulp mill in 1959.

Replacing Mr. Hanson as head shift paper chemist, will be Donald H. Carlson. He joined the Mobile technical group in May of 1960. He was graduated from Cornell in 1956, and received his master's degree from the Institute of Paper Chemistry in March, 1960.

H. D. Schmidt

St. Regis Elects New Director

Henry D. Schmidt of York, Pa., has been elected a director of St. Regis Paper Co., filling a vacancy on the board.

Mr. Schmidt is president of Schmidt & Ault Paper Co., a St. Regis subsidiary. A graduate of Yale University, he began his association with Schmidt & Ault in 1914.

O-M Names Ritson To Newly Created Post

Ian D. Ritson has been appointed to the newly created post of director of construction of Olin Mathieson Chemical Corp.

Mr. Ritson, who reports to Mr. Reed, corporate vice president for engineering, is responsible for reviewing all construction programs and progress for the corporation and its divisions and for developing standards and techniques of construction cost control.

For the five years prior to his new appointment, Mr. Ritson was project manager for Perini, Ltd., in Toronto, Canada, a subsidiary of the Perini Corp., Boston.

Albemarle Paper Chooses Technical Service Supt.

John W. Gladstone, quality control supervisor at the Halifax Paper Co., division of the Albemarle Paper Manufacturing Co., Roanoke Rapids, N. C., has been elevated to the position of technical service superintendent. He replaces David S. Most, who resigned to enter private business in Boston, Mass.

As technical service superintendent, Mr. Gladstone will direct the in-plant pulp and papermaking testing functions and the central chemical laboratory analysis of by-products and wastes.

Mr. Gladstone was employed in the

J. W. Gladstone

Technical Division of the Albemarle Paper Manufacturing Co. in Richmond, Va., in August of 1954. He served there as development supervisor, assigned to the Browns Island papermaking operations. In September of 1956 he was transferred to the Halifax Division of Albemarle as quality control supervisor, a position he held until his recent promotion.

Great Northern Gives Pollard New Post

Great Northern Paper Co. has appointed David F. Pollard assistant manager of manufacture.

Mr. Pollard, who was production supervisor at the company's East Millinocket mill, is a graduate of Tufts College with a degree in chemical engineering. Prior to joining Great Northern, he was associated with Du Pont.

Riegel Assigns Schlienz and Shields New Posts

The Specialty Products Division of Riegel Paper Corp. has announced the promotion of Ralph W. Schlienz to Mid-Western sales development manager. He replaces John Shields, who has been transferred to the laboratory in Riegel's Milford mill. Mr. Shields has been named coordinator of converting development and will have responsibilities in the fields of technical and packaging materials which are converted by waxing, laminating, solvent coating, and extrusion.

NDE Reserve of BDSA Appoints Krogfoss

The Business and Defense Services Administration, U.S. Department of Commerce, has announced the enrollment of the following pulp, paper, and paperboard industry official as a member of the National Defense Executive Reserve: Oswald K. Krogfoss, sales manager, Crandon Paper Mills Inc., P.O. Box 155, Port Madison, Iowa.

Sutherland Resigns KVP Sutherland Post

Louis W. Sutherland, Jr., announced his resignation, as of July 1, as assistant vice president of KVP Sutherland Paper Co. He plans to become an active official of the Stewart Bag Co. of Kalamazoo.

Mr. Sutherland began working at Sutherland Paper in 1938, serving in various production and administrative positions. He has held the offices of treasurer and of vice president in charge of production.

From ALBANY FELT.....

Felt Facts

"Locked In" Protection Against Bacterial Damage with . . .

W-6

CHEMICAL TREATMENT

Bacterial damage may be a serious problem in felt operation.

Some time ago, our research department developed a great many bactericidal formulas and finally created an entirely new treatment we named W-6.

The effectiveness of W-6 lies in the fact it is "locked in" chemically in the felt fibres and is designed to provide permanent protection against bacteria attack for weeks . . . even months.

Equally important, the addition of W-6 does not affect the sheet nor the operating characteristics of the felt.

If you have a bacteria problem . . . or even suspect one . . . why not investigate the Albany Felt W-6 chemical treatment?

LABORATORY ANALYSIS

Laboratory examination is the only way you can determine if your felts are being damaged by bacteria. Our Customer Service Laboratory is available to you for this analysis.

Have our Sales Engineer send samples of your used felts and we will provide you with a written report of our findings.

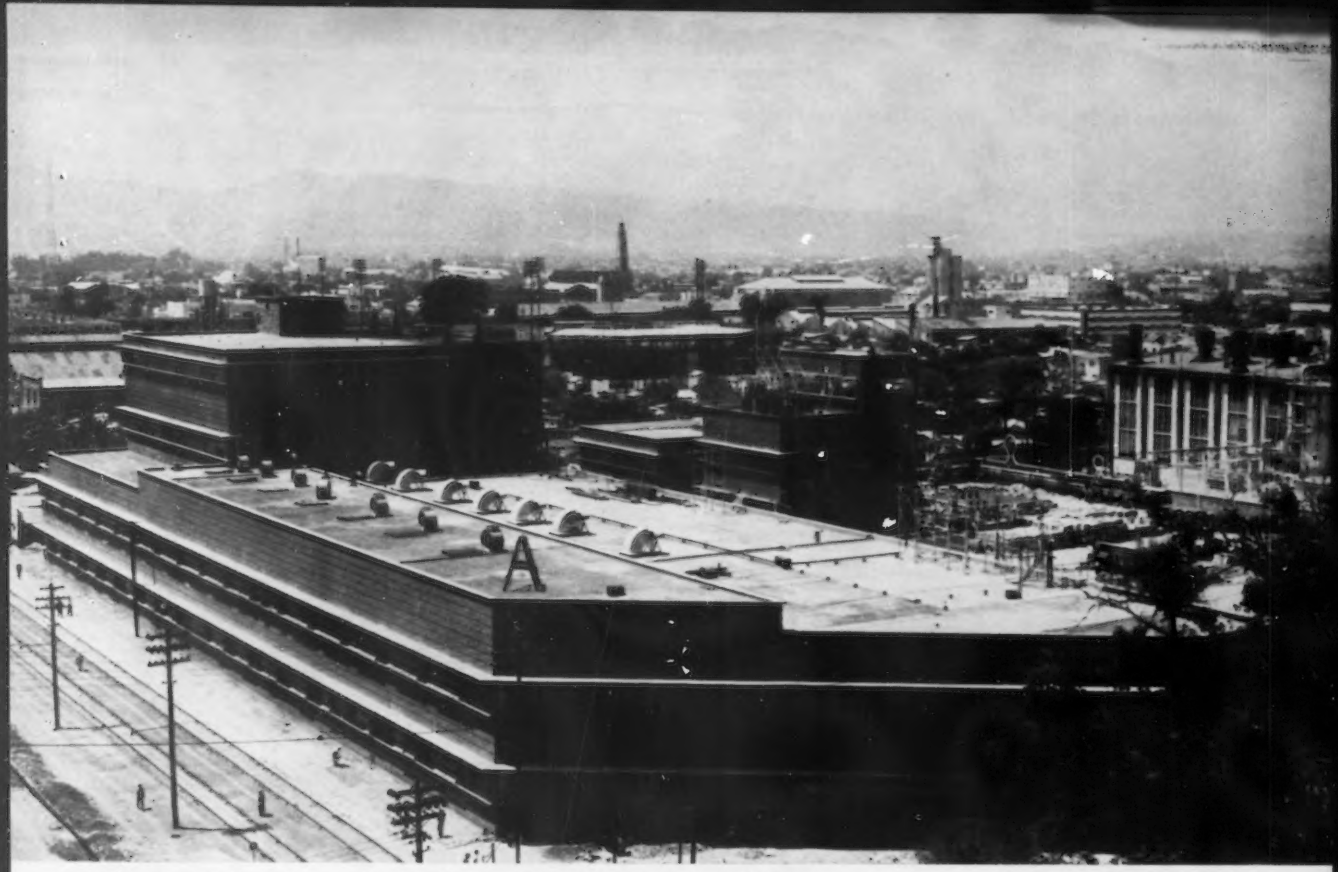
TALK IT OVER WITH YOUR ALBANY FELT SALES ENGINEER

AF

ALBANY FELT COMPANY

ALBANY, N.Y.

World's Largest Manufacturer of Paper Machine Felts



Roof pattern indicates area of two additions built onto original mill. Building in center rear houses stock preparation equipment. Higher area at left rear houses the rotary digesters and Pandia system. Power house is at extreme right.

Empaques de Carton Titan Continues Growth with Another Machine

Ceremonies witnessed by some of Mexico's leading political and industrial leaders marked the start-up of the new No. 3 paper machine in the mill of Empaques de Carton Titan S. A. of Monterrey, Mexico, this spring. Empaques de Carton Titan, which is owned by The Cuauhtemoc Brewery Group of Monterrey, produces paper and boards used for making 75 per cent of Mexico's consumption of corrugated and laminated containers. Ranking second only to Anhaeuser Busch, Cuauhtemoc is said to be the second largest brewer on the North American continent. Its affiliates, in addition to its paper and box making facilities, include a bank, a steel mill and a glass factory.

Mill Background

First paper was produced at Empaques de Carton Titan near the close of World War II on a rebuilt paper machine assembled under the trials of material restrictions and shortages imposed by a wartime economy.

In 1950 The Sandy Hill Iron and Brass Works signed a contract with Titan to rebuild this machine and to install a new Selective drive on it. This marked the beginning of a long and close association between these two companies. In 1952 the mill was enlarged and a new 90-inch, seven vat cylinder machine was built and installed by Sandy Hill. A program was instituted in 1956 to improve and increase production by improving existing equipment and Sandy Hill was commissioned to rebuild the No. 1 machine, changing it from a fourdrinier to a five vat cylinder machine. In the same year negotiations were begun for a No. 3 machine which was to be a new high speed fourdrinier machine to produce corrugating medium. Work was begun then to expand the machine room for the third time.

It is this new fourdrinier machine, designed for an operating speed of 1300 feet, and a new 60-ton Pandia continuous pulp mill for producing unbleached pulp from wheat straw, that has just been brought into production. Total paper production is now 160 tons per day with 70 tons

per day being produced on No. 3 machine; 60 tons per day on No. 2 machine and 30 tons per day on No. 1 machine.

New Pulp Mill

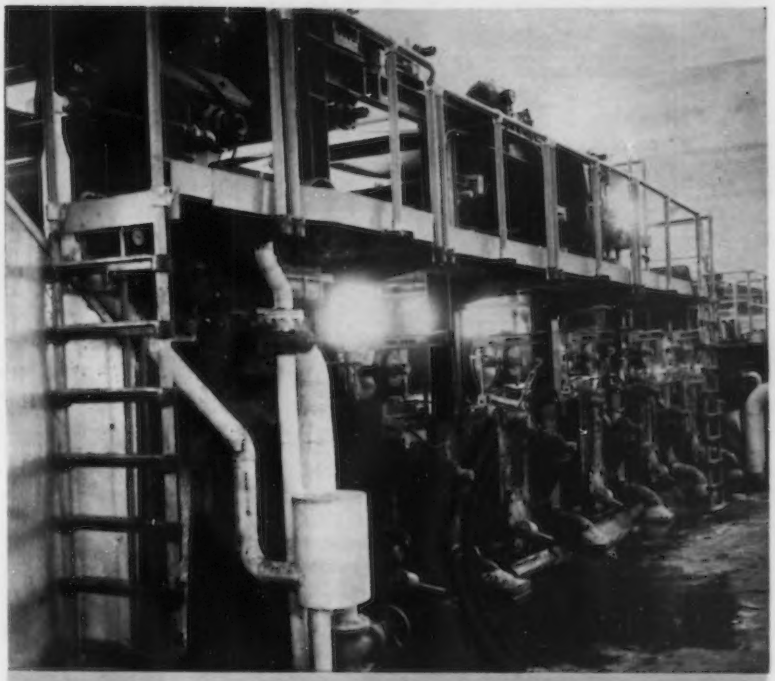
The principal equipment for the new 60-ton (metric) per day Pandia continuous pulp mill was supplied by Parsons & Whittmore, Inc. The straw is first conveyed to bale-breaking and chopping equipment. From this point it is conveyed to the Pandia digester, built by The Black-Clawson Co. and consisting of two 42-inch digester tubes.

The pulping system, complete with discharger, chemical supply pump, and live bottom blow tank, produces unbleached straw pulp for corrugating medium.

In addition to the 60 tons per day output of unbleached wheat straw pulp from the new Pandia system, Empaques de Carton Titan buys approximately 40 tons per day of Chihuahua kraft pulp produced from native woods and for the balance uses waste kraft from its breweries and box plants.

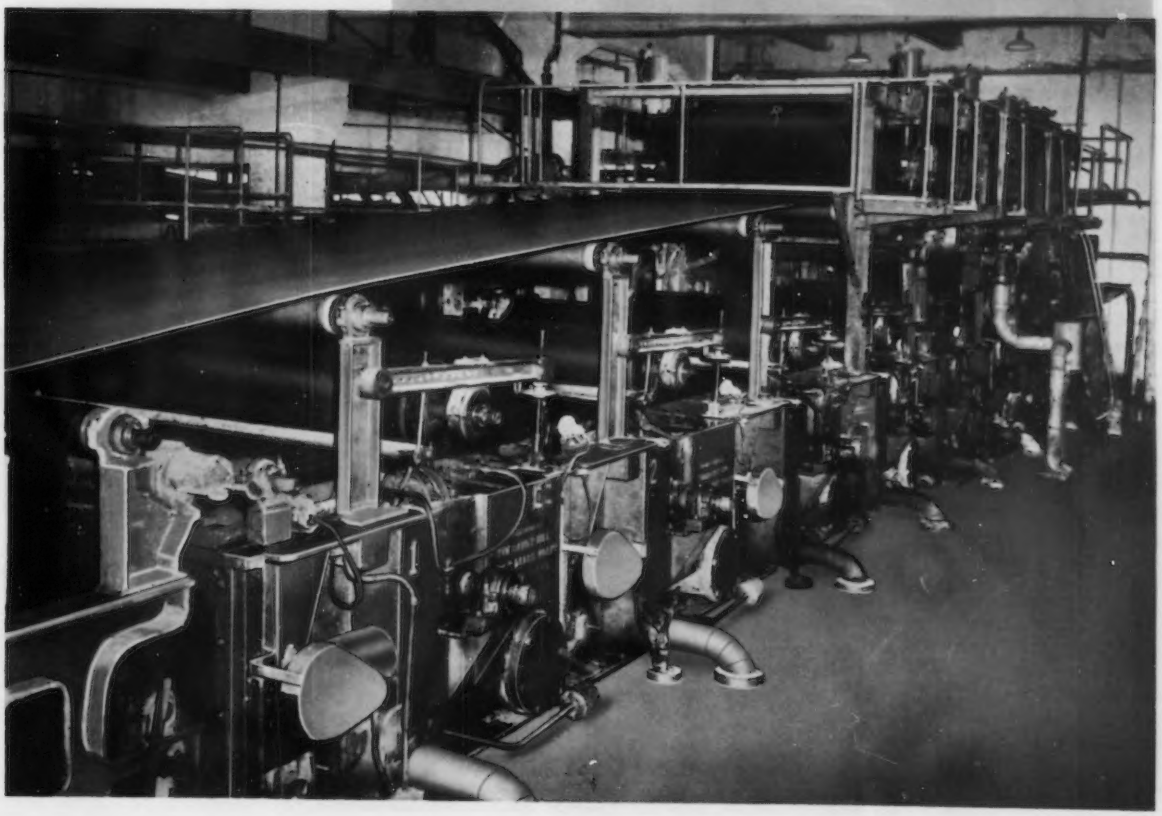
Stock Preparation System

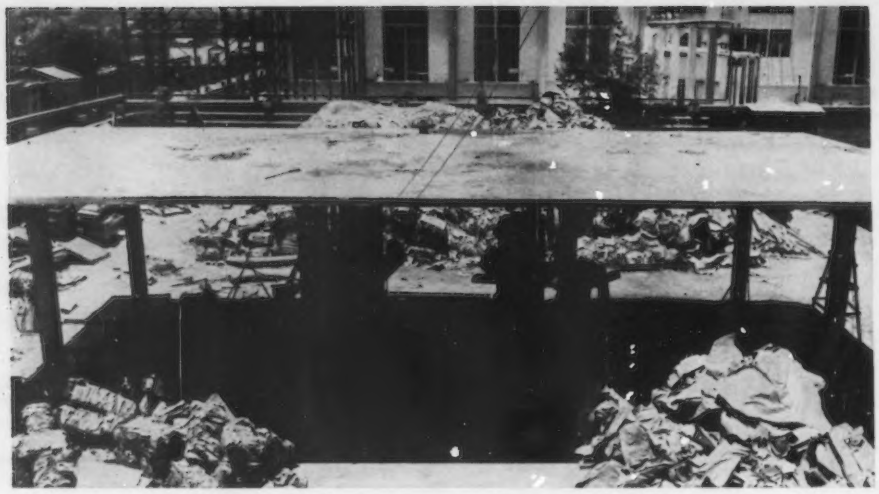
The stock preparation building which adjoins the building housing the paper machines and the pulp mill



Vat section of Titan's No. 1 machine. This was originally a rebuilt fourdrinier machine installed during World War I, converted to a cylinder machine in 1956.

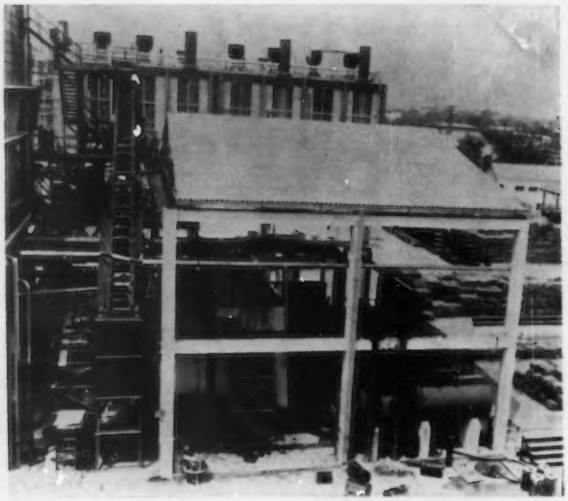
Vat section of the No. 2 machine consists of seven cylinder mould vats.

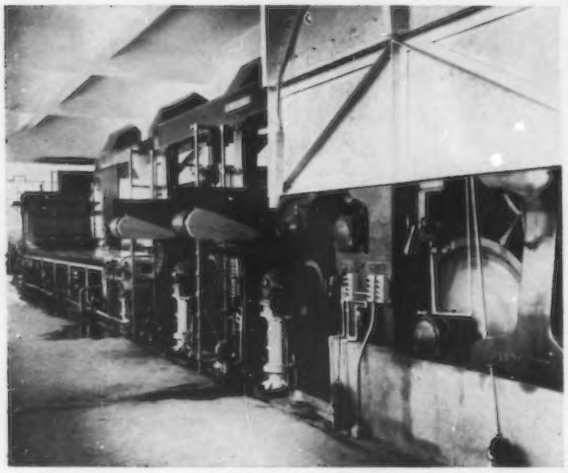




◄ Hydrapulper shed showing outside type of construction possible in this area of little rain. Powerhouse is seen in background.

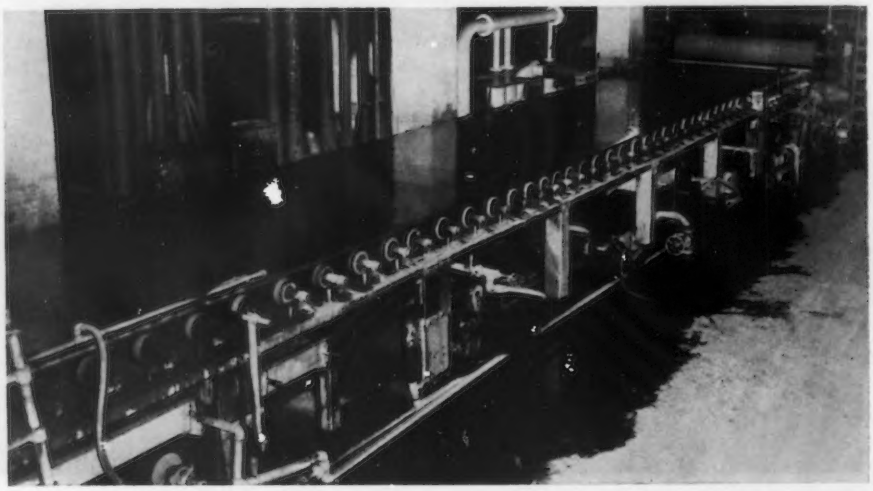
New pulp mill with Pandia continuous digester is located ► in an open structure similar to many other sections of the mill.





◄ Looking toward the wet end from the press section of No. 3 machine.

The fourdrinier on No. 3 ► paper machine has a wire length of 110 feet.



has likewise been enlarged to accommodate four Hydrapulpers where there had been one and to make room for other new stock preparation equipment.

The stock preparation equipment includes one 2,200-pound beater and one 1,600-pound beater; nine jordans; two Hydrafiners; four Hydrapulpers; two broke Hydrapulpers; two 500 h.p. disk refiners and one 250 h.p. disk refiner by Sprout Waldron; five 14 ft. Biggs rotary digesters; one continuous Pandia digester; three bull screens; seven centrifugal cleaners; two Davenport presses and two Dorr-Oliver washers.

New Paper Machine

The new No. 3 paper machine is equipped with a stainless steel three pass conventional headbox. An air foil for stock flow control is located in the last pass of the headbox and a distributor roll is in the pond just prior to the slice opening. The slice is a nozzle type. The non-removable fourdrinier is a 90-inch Sandy Hill New Ideal model comprised of standard elements. It is interesting to note that the width of the paper machine was dictated mainly by the limited width of the machine room addition which was built to occupy the remaining area between the government-owned railroad bed running parallel to the mill and the existing building. A definite advantage of settling on the exact 90-inch width was to be realized through the interchangeability of some machine parts with No. 1 and No. 2 machines which are likewise 90 inch machines.

The machinery manufacturer and the Titan management collaborated on an engineered program to hold the mill's spare parts inventory to a minimum. Maintenance has likewise been facilitated through planned interchangeability of machine parts and auxiliaries. The two cylinder machines use interchangeable cylinders, press and couch rolls, bearings, electrical equipment, pumps, dryers and dryer gears, etc. Insofar as possible items of standard equipment such as bearings, electrical equipment, calender rolls, felt rolls and some pumps are interchangeable among the three machines.

Fourdrinier Details

The fourdrinier of the new No. 3 machine is of all corrosion resistant construction with a 110-foot wire. A Sandy Hill Bertrams shake with built-in variable speed drive shakes the first table roll section. The breast roll arrangement provides for lowering the roll onto a remover board to allow for wire change without disturbing the pond plate or bearing receptacles.

The saveall system consists of stainless steel sheds and saveall pans under the complete fourdrinier. The saveall water is returned to the fourdrinier mixing pit where it is mixed with the thick stock before entrance to the fan pump and return to the headbox. The seven-inch brass tube table rolls are supported on anti-friction bearings with adjusting screws for raising or lowering the rolls. Twelve wire contact deflectors with phenolic resin blades promote drainage and prevent "throw-over." An eight-foot ruler edge deckle with a rubber lip is adjustable vertically and horizontally and is equipped with shower squirts.

The suction box section consists of three flat boxes and a Rotabelt unit followed by a 32-inch Manchester suction couch with a 13-inch box. A 16½-inch lump-breaker roll is arranged with pneumatic loading and counter balancing. Two wire stretches with totally enclosed double reduction worm gear units move the wire rolls throughout their entire range with finger tip ease. Wire guides are Gilbert and Nash, and all wire rolls are showered with Emerson white water showers.

The vacuum control system for the flat boxes and the Rotabelt is supplied by Sandy Hill, using stainless steel separators. The vacuum for the flat boxes is supplied by Nash vacuum pumps. Gould centrifugal pumps serve the wet end. All doctors are by Lodding. Doctors in the dryer section are oscillating and hydraulically

Advanced Employee Relations

Cuauhtemoc Brewery and its affiliates with nearly 5000 employed is Mexico's leading, and largest private, industrial organization. As an industrial leader, this company has been a forerunner in developing good public and employee relations. A recreational and cultural society, Cuauhtemoc and Fa-mo-sa Society was organized as long ago as 1918 for the betterment and well-being of the company's workers. This society offers its members, which include every worker of the company, medical service, life insurance, immediate aid in case of accident, illness, or death, a legal commission for guide and advisement, a library, a scholarship program, complete sports program, a purchasing service, modern and comfortable social buildings, family movies, dramatic society, a savings and loan association with special encouragement given to its members to own their own homes.

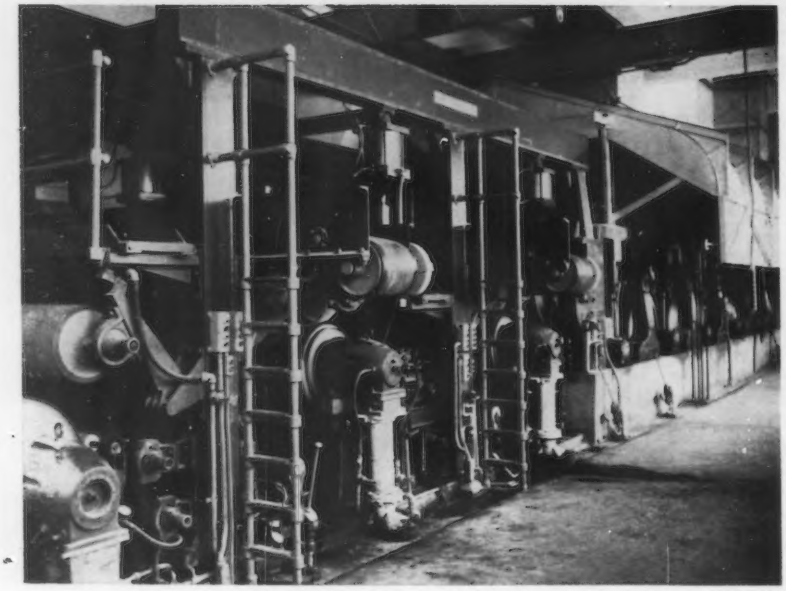
Ever since the founding of the "Cuauhtemoc y Fa-mo-sa" Society it has concerned itself with the problem of having each of its members have a home of his own, and very many of them are owners of their homes as the result of this foresight. But the Society has gone much farther: the "Cuauhtemoc Colony," located about 2 miles from the place of work, operates as a satellite city with its own churches, schools, markets, movies. Already 634 houses have been built and are lived in by members of the company. This program of construction is being continued to complete the number of houses originally planned. For the acquisition of the houses a financial plan has been established in which the workman pays a maximum of 25 per cent of his salary monthly for less than 20 years.

Early problems of the company to recruit skilled workmen were overcome by a tenacious and unceasing program to train and accumulate capable men. Today it is supplied with a veritable army of workers, all of them Mexicans, as skilled and experienced as can be found anywhere. From this pool of workers Empaques de Carton Titan is able to extend a neighborly hand to others. In recent months, when a nearby brand new paper mill went into production, Titan sent a team of its own skilled men to help train workers in the new mill.

The management of Cuauhtemoc has been largely instrumental in the establishment and maintenance of the fine technological institute in Monterrey. They have contributed heavily to its establishment.

The 80 per cent gain in paper consumption in Mexico in only five years' time is due to the tremendous increase in industrialization in recent years.

Under the able leadership of such devoted business men as Sr. Jesus E. Zambrano, President of Empaques de Carton Titan, even more rapid strides may be expected in Mexico's social and economic progress during the coming years.



The press section, showing double suction presses, each equipped with a broke carrier.

operated. Air controls for the lump-breaker roll, the presses, calender and reel are from Foxboro.

Press Section

The press section, designed with overhead framing, consists of two suction presses with 24-inch Manchester suction rolls each equipped with a broke carrier. Motorized vertical felt stretches to take up the felts are located in the machine room basement. Both presses are equipped with complete Scofield felt conditioning systems. A combination of automatic and hand felt guides are used on the presses. The automatic guides are by Gilbert and Nash.

All of the felt rolls are mounted in housing holders with quick release swing caps for easy removal during felt changes.

A No. 4 Judd refiner by Noble and Wood is one of the machine room auxiliaries.

Dryers and Stack

The dry end includes fifty-eight 60-inch dryers arranged in six sections on box type framing. The dryer framing is supported on a 30-inch high concrete pier which eliminates the need of bottom dryer frames. The plain dryer bearings are lubricated with a Turbine Equipment Co. lubrication system. Rotary pressure steam joints are by Johnson Corp. The steam control and dryer drainage equipment was supplied mainly by Stickle.

A five roll openside calender stack, with anti-friction bearings on all the intermediate or top rolls, is arranged for pneumatic loading and lifting.

The reel, a constant speed, constant pressure Sandy Hill Rola reel, is followed by a Cameron winder and unwind stands. The machine drive is a Sandy Hill Selective drive consisting of eleven right angle reducing units.

Broke from the paper machine is dumped into a Black-Clawson Hydrapulper for return and reuse in the stock preparation system.

Auxiliary Equipment

From the winder the rolls of paper are transferred to a small railroad type arrangement which serves all three paper machines, bringing the rolls to a central point for weighing and thence to the box factory located just across the street.

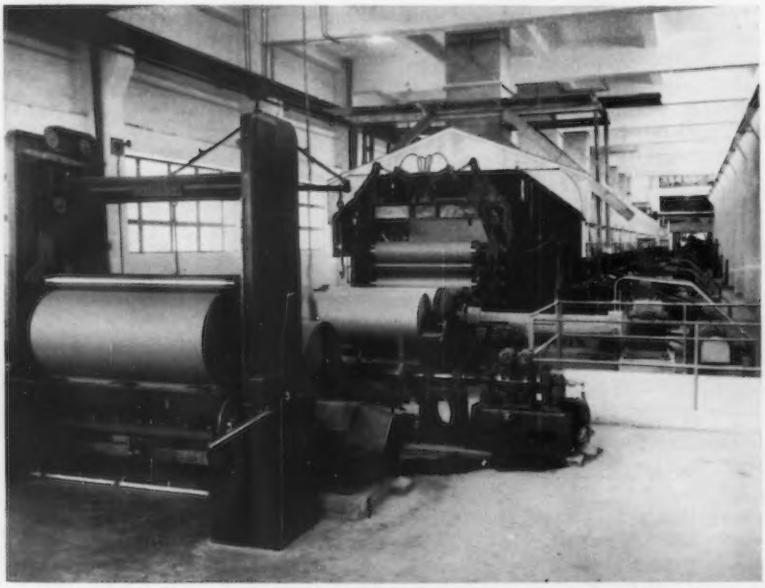
R. Frank Hollis of Alton, Ill., collaborated with Titan and Sandy Hill throughout the entire program of this expansion.

Due to existing building characteristics two overhead cranes are required to service the machine room. The cranes were furnishd by Harnischfeger Corp.

Water for the pulp and paper machinery process is pumped directly from driven wells augmented by purified water coming from the brewery.

Because of a critically limited supply, the use of water in the brewery, the power house and the pulp and paper mill must be very carefully watched and controlled to avoid danger of a water famine.

Cuauhtemoc operates its own power plants to furnish power for its several factory operations. Steam power operates No. 2 and No. 3 paper machines. No. 2 machine has a 300 h.p. Westinghouse turbine and No. 3 machine is run from a 500 h.p. General Electric turbine. No. 1 machine is operated by electric motor.



Drive side of the No. 3 machine showing the winder, the Rola Reel, openside calender and drive.

Wide Variation Shown in Corrosion Resistance of Polyester Resins

Tests under way at Atlas Powder Co. have shown that wide differences exist in the corrosion resistance properties of the various polyester resins, according to S. S. Feuer, development supervisor, Chemicals Division. In these tests, castings and laminates made from three different polyester resins—bisphenol A, isophthalic, and general-purpose—were immersed in eight corrosive aqueous solutions for periods ranging from 24 hours to 90 days and changes in physical properties were noted. The corrosive media included: distilled water, 5 per cent sodium hydroxide, 5 per cent nitric acid, 25 per cent sulphuric acid, 15 per cent hydrochloric acid, 25 per cent acetic acid, Clorox, and 5 per cent Electrosol, a commercial dishwashing detergent.

Fast Screening Inapplicable

One significant finding was the inapplicability of a fast screening technique as an index of corrosion resistance. In the screening trial, castings made from the three resins were subjected to boiling sulphuric acid, distilled water, and sodium hydroxide for 24 hours. It was found, however, that a resin might withstand the screening test satisfactorily, but would not hold up after longer immersion periods. For example, the isophthalic resin, which appeared satisfactory after a 24-hour boil in the sodium hydroxide solution, was completely deteriorated before 30 days at 210°F.

Some other results, according to Mr. Feuer, are as follows: after the 90-day exposure test, none of the bisphenol A polyester samples were deteriorated appreciably, with the exception of the casting immersed in nitric acid. On the other hand, the general-purpose polyester resin was seriously affected or completely deteriorated by all of the corrosive media. All isophthalic specimens suffered serious or complete deterioration, except for those immersed in sulphuric acid and Clorox solutions.

Polyester Resins Differ

Electrosol, a very strong dishwashing detergent, completely deteriorated both the isophthalic and general-type purpose polyesters after one month of immersion. Bisphenol A polyester, on the other hand, retained 50 per cent of its original flexural strength after 90 days. Sodium hydroxide attacked both the general-purpose and the isophthalic polyesters, and both lost all of their original flex strength before the end of a 30-day test period. Bisphenol A polyester, however, retained almost 60 per cent of its original flexural strength after three months of exposure at 210°F. According to Mr. Feuer, these results may startle those who do not realize that a resin such as bisphenol A is chemically different from a conventional general-purpose polyester.

Selection by Type

The results of these tests, according to Mr. Feuer, will make it necessary for designers and fabricators of corrosion resistant equipment and those responsible for lining tanks and other metal surfaces to select a polyester resin according to specific type and not under the general term "polyester." Unfortunately, current literature has tended to treat these materials as one group with common corrosion-resistant properties, with descriptive data usually centering about the general-purpose polyester commonly prepared from propylene glycol and maleic and phthalic anhydrides. The comparative tests at Atlas have shown that the corrosion resistance of this material bears no relationship to the properties of bisphenol A or isophthalic resins.

A copy of the complete report and subsequent reports on longer exposures can be obtained free of charge from the Plastics Marketing Section, Atlas Powder Co., Wilmington 99, Delaware.

PER CENT OF FLEXURAL STRENGTH RETENTION OF POLYESTER CASTINGS

		Dist. H_2O	25% H_2SO_4	5% NaOH	5% HNO_3	15% HCl	25% AcOH	5% Electrosol	Clorox
Screening Test Trial 24-Hour Boil	Bisphenol A	81	91	84					
	Isophthalic	74	108	106	← NOT TESTED →				
	Gen. Purp.	47	68	←14					
30-Day Immersion @ 210°F	Bisphenol A	56	66	71	66	59	74	76	70
	Isophthalic	29	72	Dissolved	41	32	19	42	89
	Gen. Purp.	←16	41	Dissolved	←12	←10	←9	←13	←15
90-Day Immersion @ 210°F	Bisphenol A	60	62	59	40	75	71	50	51
	Isophthalic	←18	73	Dissolved	←14	←20	←9	0	52
	Gen. Purp.	←13	Deteriorated	Dissolved	Deteriorated	← 7	← 7	Deteriorated	←14

Ferdinand Kraft

Ferri Casciani

F. P. Doane, Jr.

Pulp Bleaching Surveyed By International Conference

Twenty-one overseas visitors joined their Canadian and U. S. colleagues in Chicago to examine progress in pulp bleaching.

Harry Dyer,
Assistant Editor,
Paper Trade Journal

The vast and complex field of pulp bleaching came under the critical scrutiny of nearly 300 national and international experts convening in Chicago on June 14-16. The occasion was the first Pulp Bleaching Conference. The three-day meeting, held at the Edgewater Beach Hotel, was sponsored by the Pulp Purification Committee of TAPPI.

The program offered seven sessions, with 17 technical papers and included a five-man symposium which considered the question "Where do we stand today in pulp bleaching?" In general, the papers were that-general; they did however, present a well-rounded aspect of the pulp bleaching field today. Three of those presented, as noted in the resumes of the papers which follow, will comprise segments of the revised TAPPI monologue on bleaching. Each session was followed by a lively and discoursive discussion period.

General chairman of the conferwas Ferdinand Kraft of Marathon Division, American Can Co. Various sessions chairmen were: II, Robert J. Stevens, Canadian International Paper Co.; III, Ferri Casciani, P. H. Glatfelter Co.; IV, Foster P. Doane, Berstrom Paper Co.; V, H. Lance Crosby, M. W. Kellogg Co.; VI, H. W Bialkowsky, Weyerhaeuser Co. Roy P. Whitney, Institute of Paper Chemistry, moderated the panel discussion. The program was organized through the efforts of R. J. Auchter, Kimberly-Clark Corp.; Jack Whalen, Combined Locks Paper Co.; and James Wethern, Riegel Paper Corp.

The panel was comprised of: Hans Giertz, Technical University of Norway; Niles Hartler, Swedish Forest Products Laboratory; W. Howard Rapson, University of Toronto; Robert J. Stevens, Canadian International Paper Co.; J. A. Van den Akker, Institute of Paper Chemistry.

It was noted at the meeting that due to the high interest exhibited thus far, the Pulp Bleaching Conference might become a bi-annual, or even annual affair should this interest continue. The following papers were presented at this meeting:

Status and Developments in Peroxide Bleaching

Some 51 mills are now bleaching pulps with peroxide, as follows: 24 groundwood mills representing 76 per cent of the total number; 16 kraft mills or 18 per cent; 5 sulphite mills, or 13 per cent; all 6 cold soda mills in production this year.

Data obtained in the refiner bleaching of cold soda pulps show that under certain conditions there is a significant bleaching advantage when sulphuric acid is used for partial neutralization of the caustic-treated chips just prior to or simultaneously with the peroxide addition as the chips enter the refiner. Up to 65 GE brightnesses can be obtained in refiner bleaching; in towers, 65-75 brightnesses are obtained. Gould Paper Co. two-stage (H_2O_2 and sodium hydrosulphite) tower process has achieved 78-80 brightnesses on cold soda pulps.

Peroxide can be used with technical and economic advantage in 5- and 6-stage bleaching of kraft, operating with one or two stages of chlorine dioxide. The 5-stage process at Marathon Southern, Naheola, Ala.—chlorination, caustic extraction, calcium hypochlorite, chlorine dioxide, peroxide—produces a 86-88 GE pulp using 0.1-0.15 per cent hydrogen peroxide.

A high-temperature, groundwood bleaching process has been developed

Roy P. Whitney

W. H. Rapson

in the du Pont laboratory using hydrogen peroxide at 200°F. for a period of 10 minutes to produce groundwood with a brightness comparable to that obtained with conventional processes operating at 100-110°F. This high-temperature peroxide bleaching process was developed primarily to meet the needs of the smaller groundwood mills for reduced capital investment in line with reduced tonnage requirements. In the process, peroxide is added on the off-side of a decker, then the pulp is pumped through a large diameter pipe at high consistency to a neutralizing chest. From here it is next pumped to storage. There are no installations in actual service as yet, it was reported. Roy Fennell read the paper, which was coauthored with George E. Smedburg and Neil J. Stalter of DuPont Co.

Use of Reducing Agents

Of several reducing agents now utilized for brightening or for treating bleached pulps (hydrosulphites, sulphites and bisulphites, or sulphur dioxide, sodium borohydride) zinc hydrosulphite appears to be most widely used, particularly in the brightening of groundwood pulps; this is understandable on a basis of its brightening effect, relatively low cost, and the fact that its use is not accompanied by a loss in pulp yield. A groundwood brightness gain of 12-14 G.E. units can be obtained with two-three per cent zinc hydrosulphite (based on moisture free weight), depending on the temperature (up to 180°F) reaction time (0.5-4 hours), rapidity and uniformity of mixing, wood species, and pH.

Sodium hydrosulphite gives much the same brightening results as are obtained with zinc hydrosulphite. However, this chemical appears less stable than the zinc salt, particularly at low pH, and this instability might limit its brightening effectiveness.

Sodium sulphite and sodium bisulphite are also used for obtaining a moderate brightness increase in groundwood (1-2.4 G.E.), either alone or in sequence with zinc hydrosulphite.

Sulphur dioxide, sodium bisulphite and sodium metabisulphite are used as acidifying agents and as "antichlors" after the final bleaching stage in the bleaching of a variety of chemical pulps in order to eliminate the effect of residual chlorine on pulp strength and brightness permanance.

Corrosion problems, particularly on fourdrinier wire and dryer felt life, may be encountered with the use of both sulphites and hydrosulphites. There is still inadequate knowledge on the true extent of corrosion arising from the use of the hydrosulphites, and on the most economical means of reducing it.

Sodium borohydride is a strong reducing agent which shows promise as a groundwood brightening agent and for application in improving the brightness and the brightness stability of chemical pulps. However, because of its present high cost, sodium borohydride has not been used commercially in groundwood brightening or as a part of pulp bleaching. This paper was authored by J. L. Keays, and presented by R. G. Meret, both of MacMillan, Bloedel and Powell River, Ltd., B. C., Canada.

Aspects of Bleaching High Yield Chemical Pulps

The problem of bleaching high yield pulps is to obtain high brightness (greater than 80 GE) without dissolving the lignin. This cannot be performed with ordinary bleaching agents as chlorine, hypochlorite and chlorine dioxide, because these agents form colored substances with the lignin, which have to be further attacked. A final high brightness can therefore not be achieved before all lignin is dissolved.

It is well known that peroxides have a specific decoloring action on wood without reacting with the lignin under the formation of colored substances. Chlorates are also said to bleach without appreciable lignin losses. In the present work these agents have been used for bleaching high yield neutral sulphite and cold soda pulps.

It was found that sodium chlorate is not a suitable "surface" bleaching agent because chlorite, chlorine dioxide and some chlorine are formed. During bleaching a heavy discoloration takes place and a final high brightness can only be obtained by dissolving the major part of the lignin. With peroxides, however, some promising results were obtained. It

WELCOME! OVERSEAS VISITORS

Eero Avela, Oy Kaukas AB, Finland
James Buglass, Westfield Paper Co. Ltd., Scotland
Francisco R. Del Valle, Celulosa de Chihuahua, S. A., Mexico
Gilbert DeSmet, Solvay & Co., Belgium
Leslie Dewhirst, Sudbrook Pulp Mill Ltd., England
Homero L. Galindo, Celulosa de Chihuahua, S. A., Mexico
Dr. Gartner, Degussa Frankfurt, Germany
Hans W. Giertz, Technical University of Norway
Per O. Hagbarth, Op Hagbarth Engineering, Sweden
Nils Hartler, Swedish Forest Products Research Lab.
Konrad Kuehn, Kali-Chemie A.G., Germany
Gordon A. Nicholls, N. Z. Forest Products Ltd., New Zealand
Johan Richter, Kamyr A. B., Sweden
L. Y. Rys, Celulosa de Chihuahua, Mexico
M. Richard Schenck, Zellstoffabrik A.G., Germany
Rudolph Schepp, Aschaffurbrioger A.G., Germany
J. Fergus Smith, Inveresk Paper Co., England
Karl Thierfelder, Zellsstoffabrik A.G., Germany
V. H. Tapio Ulmanen, Rauma-Reploa oy, Finland

R. H. Boehm

J. M. McEwen

was found that pulps having been discolored during the pulping operation, most probably by lignin condensation, were impossible to bleach without dissolving all the lignin. If, however, the cooking could be performed under such conditions that no extra color was formed, the "surface" bleaching was quite good.

By cooking birch wood with a sodium bisulphite cooking liquor to a yield of about 85 per cent and bleaching with 2-3 per cent peroxide and 1 per cent sodium hydrosulphite, a bleached pulp of 81-82 GE and a yield of more than 80 per cent was obtained. The final pulp displayed fairly good papermaking properties, but was difficult to beat, and had high color reversion. Presented by Hans W. Giertz, Technical University, of Norway, Tronheim.

Deresination of Sulphite Pulps With Non-Ionic Surfactants

Four ways to reduce or eliminate resin levels in dissolving grade sulphite pulp are: 1) seasoning of the wood, which is particularly effective in hardwoods where metabolism of the resin by wood cells continues after cutting; 2) removing fines from the brown stock; 3) using ClO_2 in the chlorination stage; and 4) high temperature caustic extraction, with or without the use of non-ionic surfactants.

Three species of Northern British Columbia coniferous woods contain 1.5-2.0 per cent alcohol-benzene solubles. This is reduced to 0.7 per cent in calcium-base sulphite cooking and to 0.3-0.4 per cent in a subsequent hot caustic extraction. By adding surfactants in the amount of about 20 lbs. per ton of pulp during the caustic extraction the resin level can be controlled at any point down to 0.05 per cent. Ether linked non-ionics have been found to be the most effective class of additives. Homologous series of polyethenoxy tridecanol, nonyl phenol, dodecyl phenol and dinonyl phenol condensates with varying mole ratios of ethylene oxide were examined as additives. Each hydrophobic base gave a characteristic deresination efficiency related to molecular size. For all series investigated efficiency was greatest at a common hydrophobic base content which was 25-35 per cent by weight dependent on extraction temperature. The most effective temperature was 95-120°C. Level of addition had a minor effect on selection of the optimum composition.

Cottonwood behaves differently in deresination. The initial 2.0-2.5 per cent resin is reduced to 1.0 per cent in sulphite cooking and to 0.6-0.7 per cent in hot caustic extraction. Wood seasoning and caustic strength have a pronounced effect on the final resin content. Surfactant addition was much less effective than with coniferous pulps and a molecule containing 35 per cent hydrophobic base gave optimum results.

Adding the surfactant at the digester produces no appreciable advantage in reducing the resin level. Coauthor with Richard L. Paterson, who read the paper, were J. W. Wilson, and D. O'Meara, all of Columbia Cellulose Co., Ltd., Prince Rupert, B. C.

13 Other Papers

Theory of The Optical Properties of Pulp, J. A. Van den Akker, Institute of Paper Chemistry. Specialized light reflectances, such as "standard brightness" serve as measures of the whiteness potential of a pulp, and are otherwise of technical value. Even though such reflectances are not determined with monochromatic light, they are related through theory to specific spectral absorption and scattering coefficients (for heterogeneous light) in a useful manner.

Determination of Optical Properties of Pulp, J. H. E. Herbst and H. Krassig, Industrial Cellulose Research, Ltd. Mr. Herbst, who presented the paper, described a new method of determining the light absorption and scattering coefficients. When pulp is dyed under suitable conditions, the plot of $2(1-R_{oo})/2R_{oo}$ against the amount of dye is linear. The slope of this plot gives the scattering coefficient. The absorption coefficient is calculated from the scattering coefficient and the reflectivity of the undyed material. This procedure is said to have flexibility, simplicity, and an independence on the basis weight. A disadvantage is that results are relative only.

Brightness Reversion, I. H. Spinner and W. H. Rapson. Mr. Spinner critically reviewed the effect that

"I don't know about you but I picked up a few good pointers."

carbonyl and carboxyl groups, lignin, resin, fillers and metal ions have on brightness stability.

Chemistry of Acidic Chlorination of Wood Pulp, Carleton Dence, N. Y. State University College of Forestry at Syracuse. A description of the chemical changes occurring during the chlorination of wood pulp and the effect of chlorination reactions on the subsequent bleaching steps. This paper will constitute in part one of the chapters of the revision of TAPPI's monograph.

Alkaline Extraction of Wood Pulp, Morris Wayman, Sandwell International, Ltd. This paper, also written as part of the revised monograph, discussed caustic extraction as a stage in bleaching and purification of wood pulp.

Hypochlorite Bleaching, J. M. McEwen, Weyerhaeuser Co. Present day methods of sodium and calcium hypochlorite bleaching were comprehensively described.

Studies on the Mechanism of ClO_2 Bleaching, K. Kakehi, R. A. Murphy, and V. Sarkanen (presented the paper). The possible mechanism behind the partial conversion of certain lignin model compounds to cyclic peroxides when treated by aqueous ClO_2 was discussed. The significance of these peroxidic intermediates in the bleaching process was also evaluated.

Chlorine Dioxide Bleaching, Howard Rapson, University of Toronto. Ways of using ClO_2 in various sequences and in combination with other bleaching agents were reviewed. He then described an experiment where a single solution of peracetic acid and ClO_2 bleached to a higher GE than either of the agents alone. Using 0.2 per cent acid, this would cost only $2.00 more per ton of pulp.

Materials of Construction for Modern Pulp Bleaching Systems, Roland Allen, Jr. Eastern Engineering Co. Materials of construction for piping, instruments, equipment and buildings used in present day bleaching systems and their auxiliary chemical preparation and handling systems were noted. Mr. Allen's discussion included a listing of factors governing the selection of materials for a particular service. He noted that plastics either as a single material or in combination with other materials, will see increased use, although they are used relatively little now because of inadequate durability.

Peroxide Bleaching of Kraft Pulps, Nils Hartler, Swedish Forest Products Research Laboratory. In final stage bleaching of kraft pulps, hydrogen peroxide produces a pulp of maximum brightness when applied at a pH of approximately 11. When sufficient amount of silicate is present as stabilizer a surprisingly low percentage of peroxide is consumed. A high pulp consistency and high temperature are favorable from a bleaching point of view. The most attractive feature of a peroxide bleached pulp is the low brightness reversion. A certain excess of peroxide, however, has to be present at the end of bleaching. The comparatively high price of peroxide particularly in Sweden at the present time seems to form a barrier preventing the more common use of peroxide in pulp bleaching.

Laboratory Bleaching of Pinus Radiata Kraft Pulps, Gordon A. Nicholls, New Zealand Forest Products Ltd. Using a three-tower plant and recycling, a C-E-H-C-P-H sequence has been examined and found to give 85-86 GE brightness pulps. When bleaching by C-E-H-D, it was noted that a higher hypochlorite pH led to higher ultimate brightness, and that a chlorine dioxide stage sequence gave pulp of 86-88 GE brightness with better stability to heat aging. From experiments to determine the advantage of including small amounts of ClO_2 with chlorine during chlorination, it was reported that viscosity gain was related to the quantity of chlorine applied.

Effect of the Papermaking Process on Optical Properties of Paper, Richard H. Boehm, Kimberly-Clark Corp. Included in this discussion are the factors of beating and refining pulp blending, addition of fillers, dyes and bonding agents, two-sidedness wet pressing, draws and tensions, drying and calendering. This paper will form the TAPPI monograph previously mentioned.

Effect of Bleaching on Papermaking Properties, Milton H. Voelker, Institute of Paper Chemistry. Because of the many variables involved, practically every species of pulp and type of bleaching sequence has usually been considered an independent study in itself. Certain generalized concepts and principles are beginning to emerge, however. The author sketched a general outline of the overall bleaching and papermaking picture by: a general description of the ways in which bleaching chemical affects the composition and characteristics of pulp; the effects of pulp composition and characteristics on the basic papermaking qualities of the fibers; considering the manner in which the basic qualities of the fibers ultimately influence the actual papermaking properties.

Pulping and Papermaking with Redwood

Old- and second-growth redwood were digested by the kraft pulping process by normal procedure, but the yields of pulp (35.6 and 40.7 per cent by weight, respectively) were lower than that obtained from Douglas-fir cooked to the same permanganate number. The yield of redwood pulp was also low on a volume basis (pounds of pulp per cubic foot of wood) because of its low density. The kraft pulps were bleached in a six-stage process (using oxidative extraction in the second stage) with a total chlorine consumption of about 11 per cent of the unbleached pulp. The initial brightness of the bleached pulp was about 84 per cent. The redwood pulps had excellent strength. The pulp made from the second-growth wood was stronger than that made from the old-growth material in all properties except in tearing resistance.

The unbleached redwood pulps were used in making bag paper and linerboard. The bleached pulps were used in making milk carton stock, and bond, offset book, greaseproof, and filter papers.

The redwood pulps were used alone and also mixed with experimentally made Douglas-fir pulp. The paper generally had good properties for the intended product. Except for improving the tearing resistance, the addition of Douglas-fir pulp did not contribute appreciably to the quality of the paper.

From Report No. 2181 by J. Stanley Martin, chemical engineer; Forrest A. Simmonds, chemist; and Donald J. Fahey, Technologist, Forest Products Laboratory, Forest Service, U. S. Department of Agriculture, Madison, Wis.

MAINTENANCE SERIES
NUMBER 20

Installation + Bearing Lubrication = Long-Lived Vacuum Pumps

How do you properly install a vacuum pump? What is good bearing and gear lubrication? When should the pump be internally inspected? The following article contains the answers!

Irving H. Owen,
Service Supervisor,
Nash Engineering Co.,
South Norwalk, Conn.

During the years vacuum pumps have been extensively used in the pulp and paper industry, preventive maintenance has consisted of two basic procedures:

1. Proper installation.
2. Practice of good bearing lubrication procedures.

Installation

The vacuum pump has one rotating part (the rotor), and for all practical purposes is vibration free. For this reason, the foundation need only be adequate to support the weight of the machine. No special reinforcement, other than that normally required for electric motors, is needed.

The base, or sole plate on which the pump is mounted, is designed to fasten the pump to the foundation. It is not designed to support the weight of the machine without the proper mounting and grouting being done. For this reason, the mounting, leveling and grouting of the base becomes a factor in future maintenance. Care should be exercised during these operations to avoid deflection of the base, which could cause the bearings to heat to a degree detrimental to satisfactory operation.

Before mounting the base or the sole plate on a foundation, the pump should be removed from the base. Four wedges should be placed under the four corners of the base. These wedges are used to obtain the proper height and to level the base.

Once the base is properly leveled, steel blocks and shims should be placed on each side of the mounting bolts. Refer to Figure 1.

A nonshrinking type of grout is poured to support the complete underside of the base. The pump is mounted and aligned, according to standard coupling alignment procedures.

As in any installation of this type of equipment, piping should be cut so the pump and pipe flanges meet without being forced. Independent supports for the piping should be provided, where necessary, to avoid putting strain on the pump. After all the piping has been connected, check the free rotation of the pump by turning it over by hand, and recheck the coupling alignment to insure that no deflection or movement of the equipment has taken place while the piping was being fastened.

When vacuum pumps are first piped up, a 3/16-inch mesh wire screen, which is furnished with the pump, is placed across the suction flange. The purpose of this screen

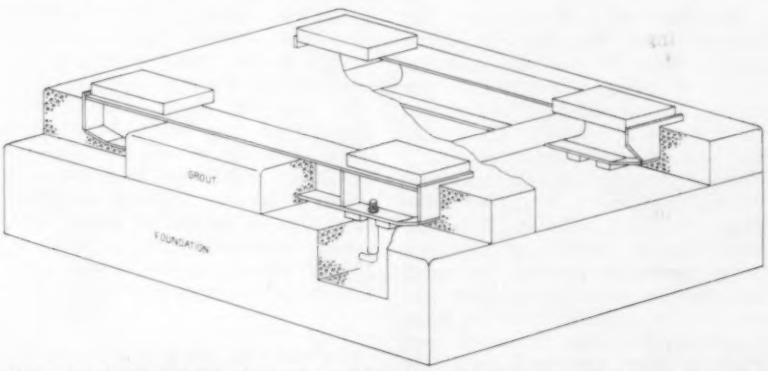


Figure 1: After leveling the base, steel blocks and shims are placed on each side of the mounting bolts.

is to catch large particles of welding shot, chips, bolts, nuts and other foreign materials which are often deposited in the piping system when connections are made. After the first week of operation, the 3/16-inch mesh screen has served its purpose and should be removed. Due to the operating principle and construction of vacuum pumps, further screens or other devices not generally required are required to eliminate any normal carry-over of paper stock or felt nap from the paper machine.

Bearing and Gear Lubrication

About the only other maintenance procedure required on vacuum pumps is the proper lubrication of bearings. Since bearings are mounted in dust-proof housings, they require no special attention other than periodic lubrication with oil that is known to be entirely non-acid.

The balls or rollers rotate through a reservoir of oil in the bearing housings. To obtain good bearing life, it is important to maintain the proper oil level in the bearing housings. These housings are fitted with a sight glass, or a constant level device.

If too much oil is added to the bearing housings, excessive churning will take place and this will result in the development of high operating temperatures. Where sight glass oilers are used, the oil should be added until the oil level is half-way up the sight glass while the pump is idle. The level, when the pump is operating, will drop to the lower portion of the sight glass; this level should be marked as the lubrication level to be maintained at all times while the pump is in operation.

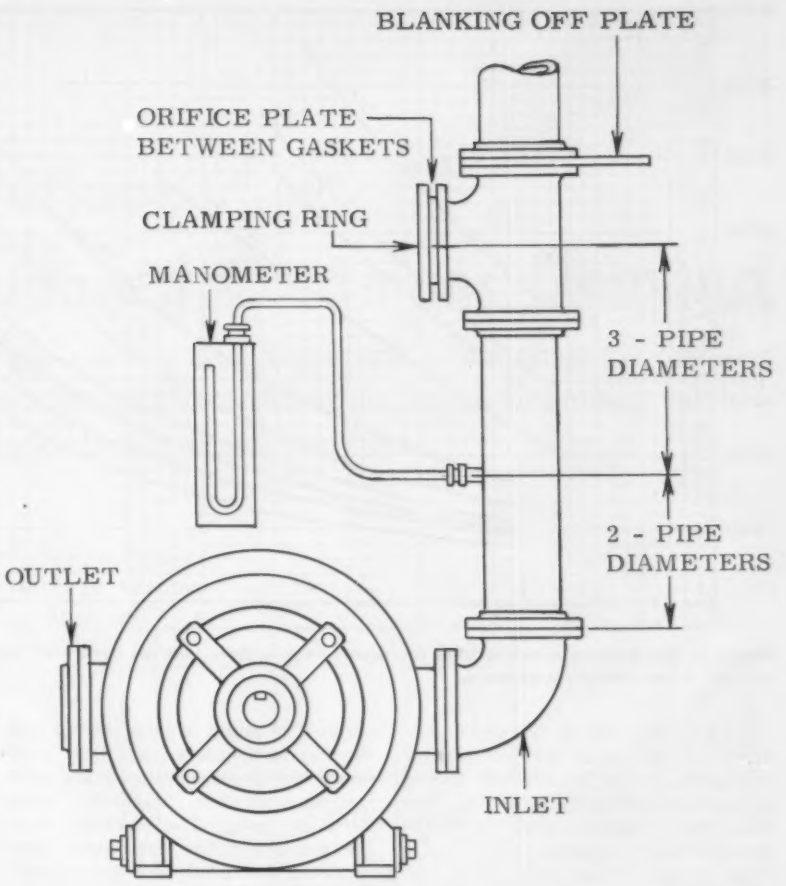
Where constant level lubricators are used, they are set so the proper oil level is maintained while the pump is in operation. No other attention is necessary except to fill the oil reservoir periodically.

The frequency of oil changes for the bearings on a new pump, or a pump which has been recently overhauled, should be as follows:

The first oil change—one week after the pump is in operation. (The oil removed may show a bronze color, which is due to the wearing-in of the bearing retainers. This will disappear with later oil changes.)

The second oil change—one month after start-up.

The third oil change—six months after start-up. Complete oil changes should be made every six months thereafter.



▲ Figure 2: Single orifice installation.

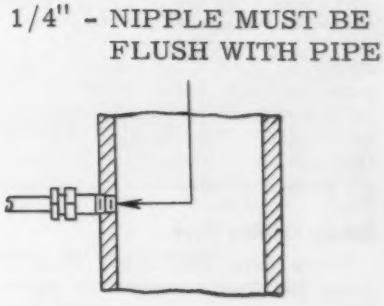
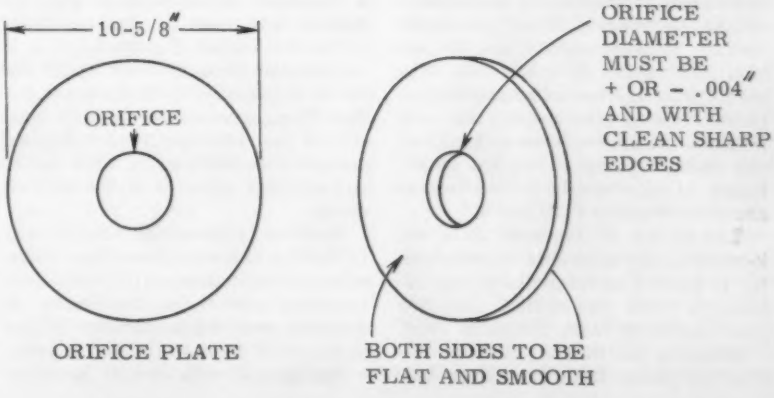


Figure 3: Manometer tube connection. ►

▼ Figure 3: Orifice plate.



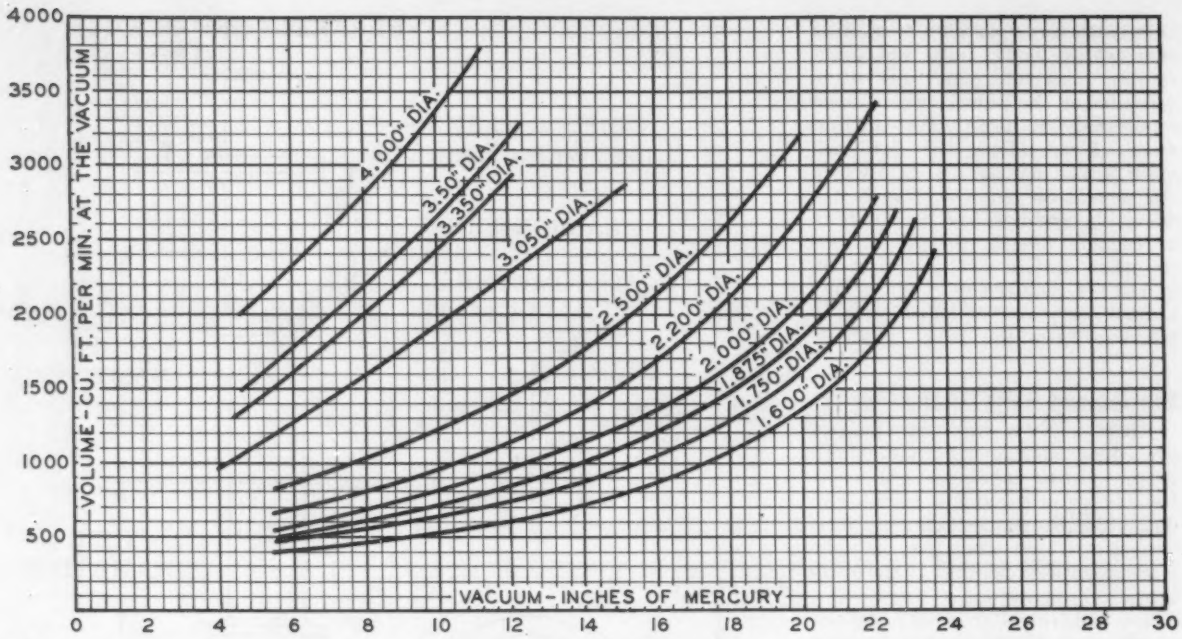


Figure 5: Performance characteristics for square-edge orifices. Curves have been corrected to 29.92 inches barometric pressure and 60° F. seal water temperature.

On pumps which do not use a gear drive, a good grade turbine mineral oil equivalent to an SAE-30 should be used as a bearing lubricant. The oil used must be non-acid. Never use detergents or additives.

On pumps using high speed motors with reducing gears mounted on the pump shaft, the same sequence of lubrication should be carried out. An oil equivalent to an AGMA #6 should be used when ambient temperatures are below 100°F., and AGMA #4 when temperatures are above 100°F. The same oil used on the gears can be used to lubricate the pump bearings.

Single Orifice Test

There have been times when a pump has been unnecessarily taken apart because it was thought that its capacity was low. In order to prevent this unnecessary disassembly of the equipment, the single orifice test is used to determine the capacity. This test is not meant to be an accurate method of measuring capacity, but to give results that will indicate the approximate capacity of the vacuum pump. A typical installation of this single orifice test is shown in Figures 2, 3, and 4.

The orifice is fastened to a tee located in the inlet line. A manometer is located at least three pipe diameters from the orifice and two pipe diameters from the pump inlet.

Blanking plates are put in to isolate the pump from the paper machine. The pump is then started and the liquid compressant flow (seal flow) rate is set in accordance with instructions that originally came with the pump. The mercury reading and the orifice size should then be noted and used with the conversion chart (Figure 5) to determine the approximate capacity of the vacuum pump. First, the curve corresponding to the orifice size used should be located. Then, a point on the curve should be located to correspond to the correct vacuum reading on the bottom of the curve. This point then locates the c.f.m. capacity on the left side of the curve.

For example, the orifice plate has a 2½-inch diameter hole and the manometer reads 18 inches. Refer to the bottom of Figure 5, read 18 inches and then proceed up to the curve for the 2½ inch diameter orifice. Then, proceed to the left hand side of the curve and read cubic feet per minute—2600 c.f.m. This is the approximate capacity of the vacuum pump.

In order to determine whether any fall-off in capacity has taken place, refer to the standard dry air performance curve for the pump in question and check capacity of the pump at 18 inches.

For pumps with two or more inlets, a separate orifice should be installed in each inlet line, or in a manifold common to all inlets.

If there should be any reduction of capacity, the per cent reduction can be determined by the following formula:

$$\frac{\text{(c.f.m.) standard curve} - \text{(c.f.m.) single orifice test}}{\text{(c.f.m.) standard curve}} \times 100 = \text{per cent reduction capacity}$$

From this test, a reasonable conclusion can be made as to whether any examination of the interior of the pump is indicated. If it should be considered desirable, the service bulletin furnished with the pump will give full instructions on the disassembly and re-assembly procedures.

In choosing the orifice size, pick an orifice which comes closest to the standard dry air performance curve for the pump in question at the operating vacuum. For example, a pump operating at 20 inches Hg. vacuum, 180 r.p.m. delivers 5000 c.f.m. Referring to Figure 5, two 2.2 inches diameter orifices deliver 5300 c.f.m. This is close enough to check the approximate capacity of the unit. The actual test with these orifices should show 19.5 inches reading on the manometer.

By following proper installation procedures and using good practice in bearing lubrication procedures, many years of dependable and reliable service can be obtained from your vacuum pumps.

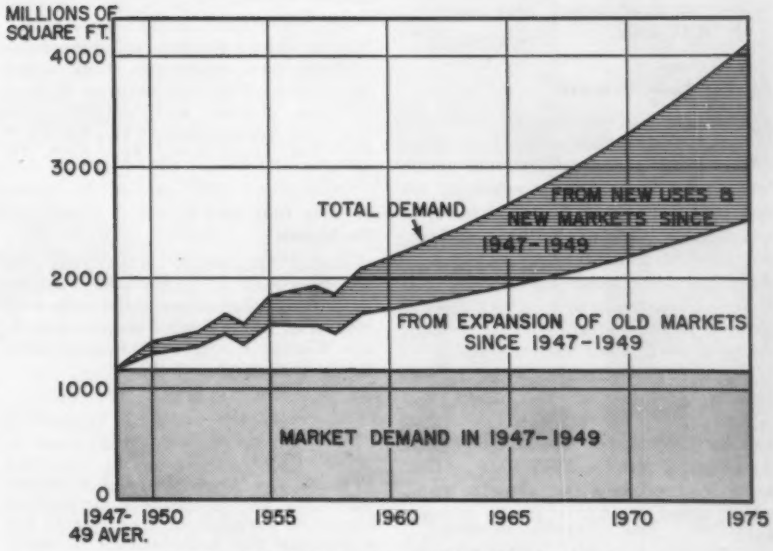
Long Term Outlook For Corrugated Container Demand

Growth rate of 4.4 per cent is indicated for the next 15 years. This is based on growth of present markets plus development of new uses.

Peter W. Hoguet,
President,
Econometric Institute, Inc.

Our long-term forecasts of corrugated box demand are based upon forecasts of activity in corrugated box end-use markets and of the competitive position of these boxes within these markets. Activity in box end-use markets is measured by an end-use index, which is derived from the components of the Federal Reserve Board's index of industrial production. Now, when corrugated box shipments are increasing at a faster rate than this end-use index, the assumption is made that the boxes are improving their position within their end-use markets through the development of new markets and new uses for fibre boxes.

During the 1947-1949 period, corrugated box demand averaged 1,200 million square feet a week while in 1959 box demand averaged 2,077 million square feet a week. This is 73 per cent above the 1947-1949 level. If no new uses and new markets had been developed for corrugated boxes since 1947-49, box demand last year would have averaged only 1,670 million square feet. This would have been 39 per cent—and not 73 per cent—above 1947-49 demand. This is demonstrated by the long-term demand chart presenting our forecast up to 1975.



Corrugated Container Demand (Weekly Average)

Slowing Down in Rate

In terms of rate of growth, between now and 1975 corrugated box demand is expected to rise an average of 4.4 per cent a year. This compares with an annual average rate of growth of 5.8 per cent during the 1950's. Our long-term forecast thus indicates a moderate slowing-down in the rate of growth of box demand. But, this rate of demand is still growing at a faster rate than that for total industrial production, which is expected to show a yearly growth rate of about 3 per cent.

By 1965, corrugated box demand will be at a rate of 2,660 million square feet a week.

By 1970, demand is forecast at 3,300 million square feet a week.

And by 1975, demand is forecast at 4,140 million square feet a week.

The weights of our corrugated box end-use index are determined on the basis of the end-use distribution of box shipments during the 1954-1957 period. The consumers' perishables component of industrial production accounts for 40.5 per cent of box shipments; the corrugated consumers' semi-durables component, 19.3 per cent; consumers' durables, 13.3 per cent; construction materials, 4.3 per cent; capital goods, 7.3 per cent; fuels, 0.7 per cent; materials and supplies, 14.1 per cent.

In forecasting corrugated box demand through 1975, we have projected our end-use activity index for this period using our forecasts of industrial production through 1975. Our forecasts of demand through 1975 are based on the assumption that demand will increase at a rate

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Based on a report presented at the 1960 Spring Meeting of the Fibre Box Ass'n.

of about 1.6 per cent a year relative to end-use activity.

Chart Explained

Our chart of long-term corrugated box demand indicates how our long-term demand forecasts have been derived. The bottom on this chart shows average demand for fibre boxes during the 1947-1949 period.

The second curve shows demand as it would have been if only the 1947-1949 ratio of corrugated box shipments relative to the end-use index had been maintained (that is, if shipments had grown at the same rate as end-use activity).

The top curve indicates the actual level of demand.

Consequently, the difference between the bottom two lines represents the growth in corrugated box demand from expansion in old markets since 1947-1949. The difference between the top curve represents the expansion from new markets and new uses since 1947-1949.

Faster than End-use

Past growth records of corrugated box demand indicate that over the next fifteen years demand for these boxes will increase, on average, 1.6 per cent each year faster than end-use activity. We expect that end-use activity (as measured by our index) will increase about 2.8 per cent a year. Together, this gives us a growth rate of actual corrugated box demand of 4.4 per cent a year.

We define "old market" as the existing markets in the 1947-1949 period. A "new market" or "new use" is a market or use that has been developed since 1947-1949. Our growth trend is a net growth trend which takes account of losses in markets.

New Uses and Markets

In projecting the net growth trend for corrugated box demand over the long term we take into account the development and expansion of new uses and new markets. The net growth trend is the percentage increase in demand that is independent of the expansion in activity in the markets for these containers.

A long-term net growth trend can only be based upon the past net growth trend and the present indications for future growth. Our assumptions about future growth in corrugated box demand take into account the most up-to-date information available and would include such recent developments as the use for packaging semi-solids and liquids.

PJT NEW LITERATURE

Agitation
Catalog

Includes illustrations, diagrams, photographs and engineering data. Also provides extensive information on all types of pulp agitation and storage systems. Improved Machinery Inc., Nashua, N. H.

Bronze Solder
Joint Valves

Lists in detail the size and dimensions of their gate, globe and check solder joint valves. This is a revision of their previous circular and includes their No. 2 SJ bronze gate valve. Walworth Co., 750 Third Ave., New York 17, N. Y.

A New Idea in
Packaging

Contains illustrated sales copy on Avistrap cord strapping which is said to provide advantages entirely new in industrial packaging. Bulletin. American Viscose Corp., 1617 Pennsylvania Blvd., Philadelphia 3, Pa.

Chromium
Chemicals

Presents the properties and principal uses of the industrially important chromium chemicals and represents the experience and achievements of more than a century's continuous activity in this field. Technical Bulletin. Solvey Advertising Section, Solvay Process Div., Allied Chemical Corp., 61 Broadway, New York 6, N. Y.

Cost Saving Ideas for
The Paper Industry

Describes applications for Metex knitted wire mesh mist eliminators in the pulp and paper industry, which are outstanding examples of how this produce can cut costs and solve nasty pollution problems at the same time. Brochure. Metal Textile Corp., Roselle, N. J.

Dayton Poly-V
Drives

Outlines design advantages of these belt drives and shows how single unit design provides twice the tractive surface per inch of sheave width and can deliver up to 50 per cent more power in as little as 2/3 the space. Booklet A2343. Dayton Industrial Products Co., 2001 Janice Ave., Melrose Park, Ill.

Expandable
Boxboard Printer

Shows how this Model KE-60 is used for printing pre-cut blanks or sheets. Brochure. Specialty Automatic Machine Corp., Burlington, Mass.

Extrusion
Coating Today

A review of current developments in polyethylene extrusion coating is a paper by F. R. Tittman of Union Carbide Plastics Co. at the meeting of the American Chemical Society. Reprint MS. No. 2042. Union Carbide Plastics Co., 30 E. 42nd St., New York 17, N. Y.

Gas Flow
Computer

Tells how this computer automatically and continuously measures and records the mass flow on an Electronik recorder. Data Sheet 7.08. Minneapolis-Honeywell Regulator Co., Wayne & Windrim Aves., Philadelphia 44, Pa.

Goodyear
Latices

Tech-Book Facts cover Latex types and properties PLI-10 covers Pliolite Rubber Latex and PLI-11—Pliolite Resin Latex. Chemical Div., Goodyear Tire & Rubber Co., Akron 16, Ohio.

Heat-Transfer
Oil

Gives complete information on Sun 21 heat-transfer oil, including properties and advantages. Bulletin 53. Sun Oil Co., Industrial Products Dept., 1608 Walnut St., Philadelphia 3, Pa.

Motor
Couplings

Describes three additions to Link Belt's line of MC geared flexible motor couplings, which have corrosive duty cover. Folder 2875. Link Belt Co., Prudential Plaza, Chicago 1, Ill.

Printweigh
Scales

Contains illustrations of representative models and type, and a list by groups of the many models available. Form 2023. Toledo Scale, Div. of Toledo Scale Corp., Toledo 12, Ohio.

PJT NEWS OF SUPPLIERS

T. E. Casselman, Jr.

W. S. Roberts Jr.

A. L. Danielsen

H. R. Fulton

Stone & Webster Engineering Corp. has announced the election of two vice presidents. They are: Theodore E. Casselman, Jr., manager of the firm's New York office; and Wilbur S. Roberts Jr., manager of Stone & Webster's new business activities.

Mr. Casselman joined Stone & Webster in 1940 as a project engineer in the Boston headquarters and was made an assistant engineering manager in 1957.

Mr. Roberts, who has headed new business activities since January 1958, was graduated from Union College in Schenectady. He joined the organization in 1941. From 1949 through 1953 he was assigned to Great Britain to assist with the construction of petroleum refining facilities.

Oakite Products, Inc., has appointed Daniel B. Lamb Detroit division manager. He replaces Thomas R. Smith, who is retiring after 19 years as head of the Detroit division.

Mr. Lamb joined Oakite as a technical service representative in Knoxville, Tenn., in 1947. For the past seven years he has served industry in the Kokomo, Ind., area. In 1956 he received the company's citation for distinguished service in industry.

Cummins & Barnard, Inc., engineers, of Ann Arbor, Mich., announce the merger, effective May 16, of the consulting engineering practice of C. D. Bassett with Cummins & Barnard. Mr. Bassett will serve as a vice president and director.

Other owners are: H. N. Barnard, R. J. Bowes, A. A. Cummins, R. W. Greenwood, J. H. Krick, C. F. North, F. Von Voightlander, R. A. Sarri and Hugh N. Barnard.

Bailey Meter Co., Cleveland, Ohio, announces the appointment of two regional sales managers.

Region I, comprising the company's eastern district offices, is under the supervision of H. R. Fulton, whose headquarters are in Pittsburgh.

Region IV, comprising the western district offices, is under the supervision of A. L. Danielsen, whose headquarters are in Denver.

Mr. Fulton, formerly manager of the Pittsburgh district, joined the company in 1924. He was graduated from Penn State University in that year, and received a B.S. in mechanical engineering.

Mr. Danielsen joined the company in 1940, after graduation from the University of Illinois. He holds a B.S. in mechanical engineering. Former manager of the Denver district, he worked in the Chicago and Denver districts prior to his appointment as Denver manager in 1953.

J. E. Sirrine Co. of Greenville, S. C., has elected H. Wells Meakin vice president in charge of the Pulp and Paper Division. Mr. Meakin has been on the staff of the Sirrine company since 1928.

Mr. Meakin has been associated with Sirrine on the design of such paper mills as the Southern Paperboard Corp. of Port Wentworth, Ga.; Riegel Carolina mill of Acme, N. C.; Hudson Pulp & Paper Corp., Palatka, Fla.; Bowaters Southern Paper Corp., Calhoun, Tenn.; Marathon Southern Corp., Naheola, Ala.; Crossett Paper Mills, Crossett, Ark.

Dodge Manufacturing Corp., of Mishawaka, Ind., according to J. Allan MacLean, Dodge president, has formed a wholly owned subsidiary, Dodge Manufacturing International, A. G., with headquarters in Zug, Switzerland. Arthur Terry, III, a member of the Mishawaka sales organization since 1954, has been appointed European manager of the Swiss company. Mr. MacLean is chairman of the board of administrators of the international subsidiary.

Also announced was the acquisition by Dodge International of majority interest in a new operating subsidiary, Dodge de Mexico, S. A., with headquarters in Mexico City. This company is headed by Mr. MacLean as president, and Thomas M. Nevin as executive vice president.

Ten years ago Dodge and J. H. Fenner & Co. jointly established a company known as Fenner Dodge (Australia), Pty. Ltd., last year near Sydney, Australia.

J. A. MacLean

Arthur Terry III

J. L. Burton

H. A. Webb

National Starch and Chemical Co. (Canada), Ltd., announces the promotion of John L. Burton to supervisor of technical service in Toronto. Mr. Burton joined National after receiving his Batchelor of Applied Science in chemical engineering degree from the University of Toronto in 1955.

General Aniline & Film Corp., New York, announces that H. Allison Webb, sales manager—Dyestuffs of the Dyestuff and Chemical Division celebrated his 25th anniversary with the company at a luncheon.

Mr. Webb, a graduate of Clemson College, S. C., started with the company shortly after graduation in 1935 as a technical service representative with General Dyestuff's service laboratory. He later became a sales representative for the firm,

until his appointment to branch manager of the Chattanooga office in 1954.

In 1957 Mr. Webb was promoted to assistant sales manager-dyes, at the company's main offices in New York. He was appointed to his present position in 1959.

Huyck Felt Co., division of Huyck Corp., Rensselaer, N. Y., announces the appointment of Marshall McKew as senior research engineer in the Research and Development Department. In his new assignment, Mr. McKew will be primarily concerned with the design, development and manufacture of needled papermakers' felts. He was graduated from Lowell Technological Institute as a textile engineer and has had 13 years' experience in all phases of manufacturing woven and non-woven products. Prior to joining Huyck, he was superintendent of Troy Blanket Mills, Troy, N. H.

P. W. Thompson

Marshall McKew

Shuler & Benninghofen, Hamilton, Ohio, now celebrating its one hundred and second year of service to the papermaking industry, has appointed Paul W. Thompson national sales manager for Hamilton Felts.

Mr. Thompson has been associated with the company for many years in sales and service, and is well known to the paper industry in the midwest for his development of paper machine clothing.

CHAS. T. MAIN, INC.

ENGINEERS

PROCESS STUDIES, DESIGN, SPECIFICATIONS, CONSTRUCTION SUPERVISION

PULP AND PAPER MILLS

STEAM, HYDRAULIC AND ELECTRICAL ENGINEERING REPORTS, CONSULTATION, VALUATIONS

BOSTON, MASSACHUSETTS

CHARLOTTE, NORTH CAROLINA

A GIANT new quarter million dollar dryer which will speed up production and provide better finish to papermakers felts is now in operation at Albany Felt Company's Albany, N. Y., plant. Designed and erected by Albany Felt plant engineering department personnel, the dryer is adaptable for drying all types of felts, including Albany's new Needled Durasorbs.

The Black-Clawson Co. announces the appointment of Carl C. Landegger as executive vice president. Mr. Landegger, a vice president of the company, previously served in several management and administrative positions with divisions of the company. As executive vice president, Mr. Landegger will coordinate management of these facilities from the corporate offices in New York.

He is a director of Black-Clawson and has been active in the management of the Paper Machine Division in Watertown, N. Y., and the Shartle Division in Middletown, Ohio.

Before joining Black-Clawson, Mr. Landegger was employed by Parsons & Whittemore, Inc., and later served for one year with the Bank of America and for two years as manager of a paper mill and groundwood pulp mill in Austria and as manager of Companhia Federal de Fundicao, Rio de Janeiro, Brazil.

C. C. Landegger

L. H. Flanders

John W. Bolton & Sons, Inc., and The Emerson Manufacturing Co. Division has appointed Lee H. Flanders a sales representative. Mr. Flanders will cover the California territory and will make his residence at 3711 Fruitvale Ave., Oakland 2, Calif.

Prior to joining Bolton-Emerson, Mr. Flanders was a field sales representative of the Cities Service Oil Co. assigned to the Rhode Island Division. In addition, he was associated with the U. S. Steel Corp. and with the Hudson Pulp and Paper Co. where he worked for three years in the technical department. He graduated from Temple University, Philadelphia, Pa., receiving his B.S. degree in business administration.

J. O. Ross Division of Midland-Ross Corp. announces five promotions within the division.

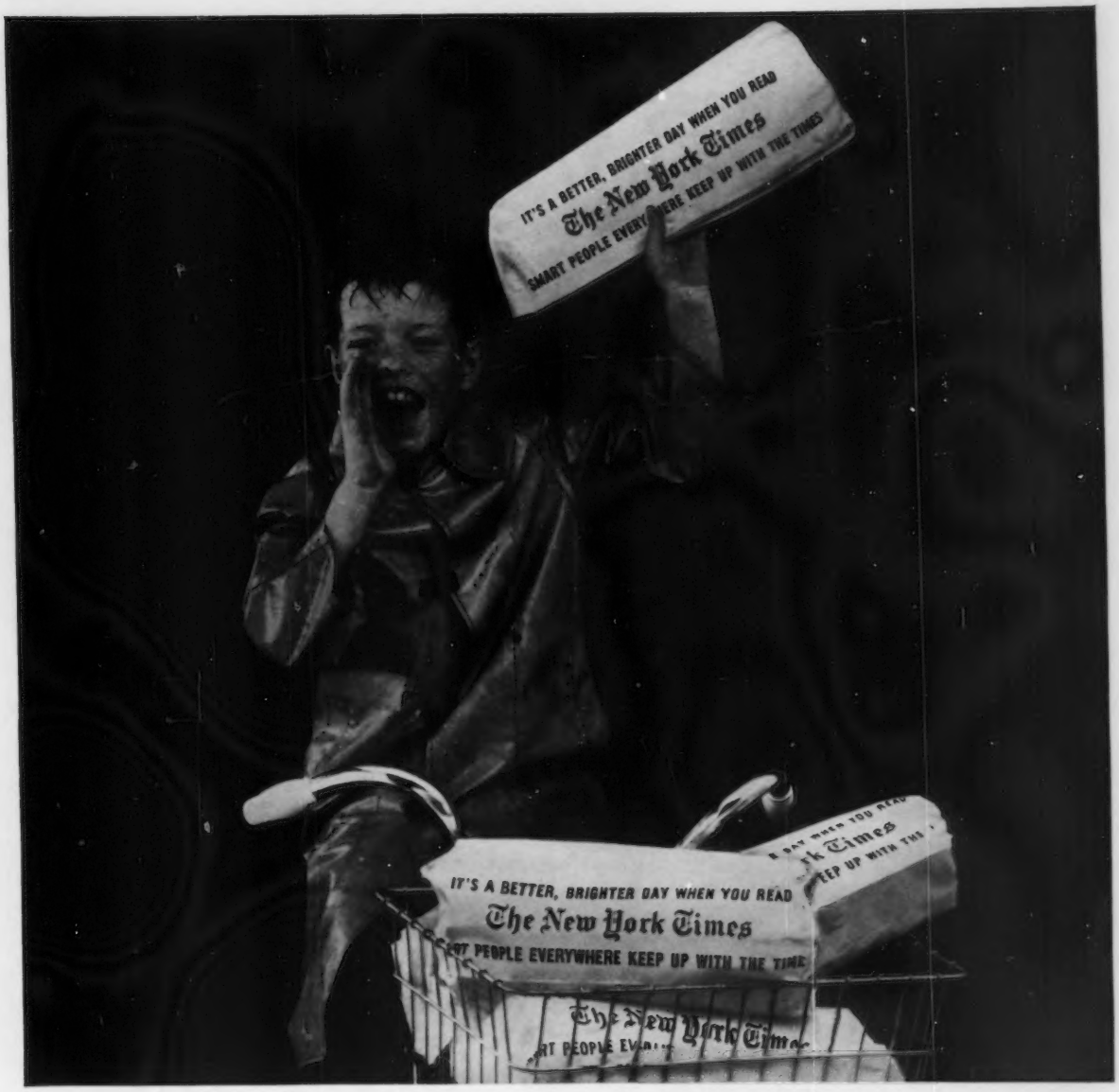
The changes, to become effective within the next few months, will send Robert W. Grott, currently district manager of the Ross Seattle office, to the New York office as assistant chief engineer for the division. He is a graduate of M.I.T.

Paul Goldner will replace Mr. Grott as the district manager of the Ross Seattle office. An experienced paper mill salesman, he presently covers the New York State mills from the New York office. He started with the company in 1940 after attending C.C.N.Y.

George Schuning, formerly a sales engineer in the Ross Chicago office, will become district manager of the Boston office. Mr. Schuning was one of the select group that last year was awarded a Sloan Fellowship for a special management course at M.I.T.

Dave Alexander, now a sales engi-

(Continued on page 50)


IT'S A BETTER, BRIGHTER DAY WHEN YOU READ
The New York Times
SMART PEOPLE EVERYWHERE KEEP UP WITH THE TIMES
IT'S A BETTER, BRIGHTER DAY WHEN YOU READ
The New York Times
PEOPLE EVERYWHERE KEEP UP WITH THE TIME
The New York Time

TITANOX® helps make a good paper better

Don't misunderstand us. We're not claiming any credit for the editorial content of the New York Times, one of the world's great newspapers.

But we are proud that TITANOX titanium dioxide is being used to brighten the "rainy-day" bags that help the Times reach its subscribers in the most readable condition. It's this white titanium dioxide pigment that gives this waxed-paper stock the whiteness, brightness and opacity that makes the Times' advertising message stand out.

Because of their uniformity of all properties, TITANOX white pigments are always a favorite—not only for overcoming the transparency caused by waxing, but also for opacifying the highest grades of writing and printing papers. Whether added at the beater or in surface applications, TITANOX always makes a good paper better.

And as it is with paper, so it is with a wide range of other products... there is a TITANOX pigment for anything that needs whitening, brightening or opacifying. Titanium Pigment Corp., 111 Broadway, N.Y. 6, N.Y. In Canada: Canadian Titanium Pigments, Ltd., Montreal.

TITANIUM PIGMENT CORPORATION
SUBSIDIARY OF NATIONAL LEAD COMPANY

7823

U.S.I. SERVICES THE PAPER INDUSTRY WITH TECHNICAL LAB ASSISTANCE...

IN PACKAGING—From studies such as this test of heat seal strength, U.S.I.'s Polymer Service Laboratories develop recommended procedures for all aspects of polyethylene packaging.

IN PULPING—Tech Service Engineer at U.S.I.'s laboratory-scale pulp and paper "plant" determines brightness of a hand sheet he has made from customer's pulp, on Hunter Multipurpose Reflectometer. He will also test it for tensile and bursting strengths, folding resistance.

in pulping
in converting
in packaging

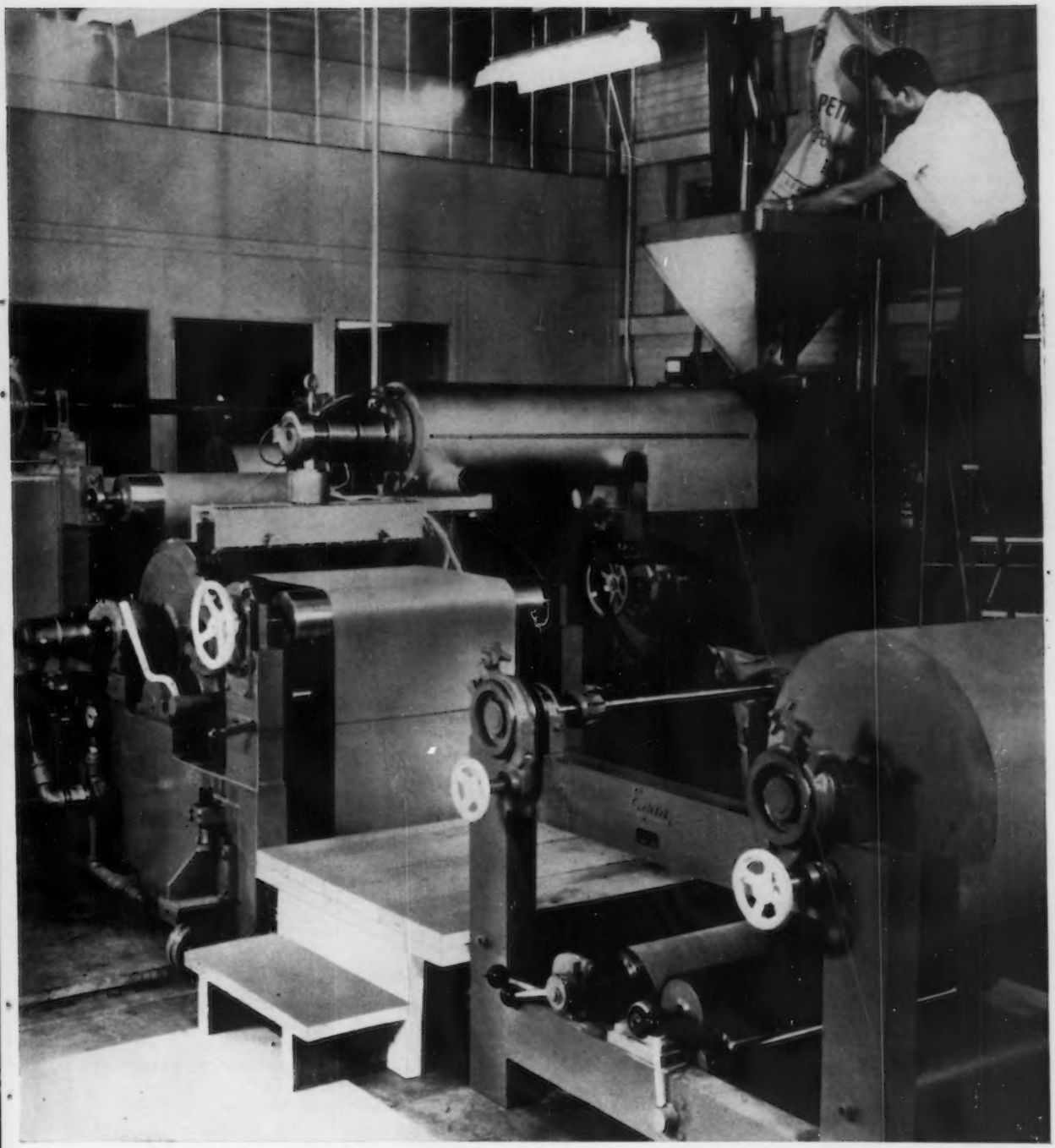
Whether you're pulping, converting or packaging paper products, U.S.I. has a laboratory and staff devoted to technical service in your field. Its job: to see that U.S.I. products for the paper industry give you the results you need in your operation.

U.S.I.'s pulp and paper laboratory—built eight years ago when U.S.I.'s Huntsville, Alabama, chlorine and caustic soda plant began operation—is a miniature paper plant, complete with auxiliary testing equipment. Here our engineers work on bleaching and assist with other applications of U.S.I.'s chlorine, caustic, ammonia, sodium peroxide . . . determine systems, techniques, types and concentrations of chemicals so that customers will know how to produce the brightest pulp with minimum fiber degradation.

Another lab at Tuscola, Illinois, is staffed with experts on polyethylene technology—including coating of paper and board, and packaging of paper products for the consumer market. They have equipment to duplicate commercial production and testing techniques . . . to tackle any problem involving an application for PETROTHENE® polyethylene resins.

A vital part of the Polymer Service Laboratories' work is development of new polyethylene paper coating and paper products packaging techniques along with design of necessary equipment.

Write or call for more information on how these services can work for you in improving your products . . . expanding your markets.



IN CONVERTING—Duplicating commercial equipment in everything but width, this coating machine at U.S.I.'s Polymer Service Laboratories is a key factor in developing new polyethylene resins for specific substrates. Latest products to come out of such work are three new PETROTHENE® resins designed for paper coating applications.

U.S.I. INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corp.
99 Park Ave., New York 16, N. Y.
Branches in principal cities

CHLORINE • CAUSTIC SODA • SODIUM PEROXIDE • AMMONIA • PETROTHENE® POLYETHYLENE

NEWS OF SUPPLIERS

(Continued from page 46)

neer in the Boston office will be assigned to paper mill sales territories in the New York office. He is a 1955 graduate of the University of Maine.

Ken Jones, who has been in charge of paper mill sales in the New York office, has been made district sales manager. Mr. Jones joined Ross in 1939, after attending Pratt Institute of Technology in New York.

Joseph T. Ryerson & Son, Inc., appointed Richard E. Clark manager of aluminum products sales at its Detroit plant.

A native of Texas, Mr. Clark was graduated from Texas A. and M. College with a B.B.A. degree. After two years in military service, he joined the sales department of Vinson Steel and Aluminum Company, Dallas, Texas, in 1957.

Eaton Manufacturing Co. has established a Pacific Coast sales office for the Dynamatic, Cleveland Worm & Gear and Farval divisions with Ralph E. Bennett as regional manager.

The Pacific Coast region, with headquarters at 1487 Bayshore Boulevard, San Francisco, will include Vancouver, Seattle. Portland, Los Angeles and San Francisco.

OBITUARIES

John W. Benninghofen, 47, an active partner of Shuler & Benninghofen, Hamilton, Ohio, died June 1 of a heart attack in Hershey, Pa., where he had been taking a short vacation.

Mr. Benninghofen, a fourth generation Benninghofen, was named for his great grandfather, who, with Asa Shuler, founded the Hamilton firm in 1858.

Ernest C. Marchand, 65, owner and operator of Sea-Way Paper & Box Co., wholesale distributor of paper products, Watertown, N. Y., died June 15.

Dean King Phillips, 48, general manager of the Diamond Match Division, Diamond National Corp., died June 5 at Columbia Presbyterian Hospital, New York, after a brief illness.

Prior to his promotion to general manager last month, Mr. Phillips had been director of public relations. He started his business career after graduating from Yale University (class of 1934) with Armco Steel Corp.

Karl F. McGrann, 63, an executive of Ontario Paper Co., Ltd., Thorold, died May 28 after a long illness.

Born in Watertown, N. Y., Mr. McGrann joined the company at Thorold in 1930. He became vice president in charge of sales at Ontario Paper in 1955. He was also a vice president of Quebec North Shore Paper Co., a subsidiary of Ontario.

Lloyd Thompson Sandborn, 60, assistant research director for The Crossett Co. died June 7 at his home in Crossett, Ark.

Dr. Sandborn, a native of Appleton, Wis., had lived in Crossett 14 years. He received his A.B. degree from Lawrence College and his master of arts and doctor of philosophy degrees from the University of Illinois. Before coming to Crossett, Dr. Sandborn was a chemist with Du Pont in Wilmington, Del., three years and with Marathon Corp., Wausau, Wis., from 1929 to 1946.

Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	May 14	May 21	May 28	June 4	June 11
1960	98.7r	98.1r	97.4r	96.2r	98.6
	May 16	May 23	May 30	June 6	June 13
1959	97.6	96.6	91.9	94.2	95.6

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1960	96.7	97.9	98.3	97.0	97.5‡	—	—	—	—	—	—	—	—
1959	87.8	90.5	93.2	94.4	95.5	95.6	84.5	96.0	92.4	97.4	96.2	86.6	94.0

‡ Preliminary

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

COMPARATIVE YEARLY SUMMARIES

	1953	1954	1955	1956	1957	1958	1959	1960
Year to Date	94.2	93.6	97.2	101.3	94.8	88.0	92.4	97.6
Year Average	92.3	91.6	96.2	97.9	90.4	87.0	94.0	—

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	May 14	May 21	May 28	June 4	June 11
1960	94	95	93	85	96
	May 16	May 23	May 30	June 6	June 13
1959	96	95	97	88	98

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1960	92	95	94	92	94	—	—	—	—	—	—	—	—
1959	89	94	95	94	96	96	83	97	92	96	94	80	92

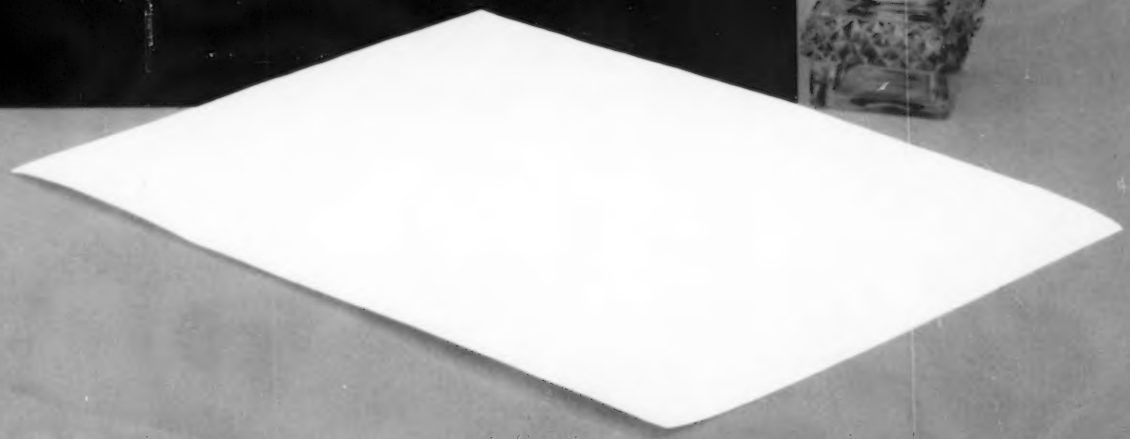
† *Per cents of operation based on "inch-hours" reported on a 6-day basis to the National Paperboard Association.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	THIS WEEK ENDING June 11, 1960	LAST WEEK ENDING June 4, 1960	CUMULATIVE TO DATE Jan. 1 to June 11, 1960, incl.
% Activity	96%	85%	93%
Total	327,206	289,565	7,226,173
Containerboard—Domestic Use	168,199	147,581	3,695,211
Liner	111,580	97,557	2,462,199
Corrugating Material	50,886	44,814	1,111,628
Chip & Filler Board	5,733	5,210	121,384
Boxboard—Domestic Use	102,387	91,529	2,271,121
Folding	64,506	52,857	1,363,386
Set-Up	11,931	9,082	260,276
Special Food Board	25,950	29,590	647,459
Other Paperboard	56,620	50,455	1,259,841
Containerboard Type	25,676	24,296	596,096
Boxboard Type	30,944	26,159	663,745
Total Orders			
Received	328,895	327,221	
Unfilled End of Week	482,631	480,507	

Noteworthy

Letter papers which reflect good taste are made with Glidden Zopaque Titanium Dioxide



Stationery often must serve as a man's personal emissary. For this task, it requires the quality appearance supplied by Glidden Zopaque.

Zopaque lends highest opacity, whiteness and brightness to paper products. Readily dispersible, it is ideal for all formulations.

Write now for full information on grades of Glidden Zopaque Titanium Dioxide specially developed for beater addition and coatings.

QUALITY Glidden PRODUCTS

FINEST PIGMENTS FOR INDUSTRY

The Glidden Company
Chemicals—Pigments—Metals Division
Baltimore 26, Maryland

(This advertisement is printed on paper stock containing Glidden ZOPAQUE Titanium Dioxide.)

Panelyte® parts keep paper machines rolling

Bearings, blades, tubes, bushings, covers—these and many more Panelyte laminated plastic parts have been *proved* in operation on some of the industry's largest and most modern paper-making machines.

You can count on Panelyte for extra toughness and high strength, lightness of weight, low water absorption, resistance to heat and corrosion and a low friction coefficient. These outstanding Panelyte properties are available in a *complete* range of parts for paper-making machines of all sizes.

You're also assured of quick delivery of the parts you need from Panelyte distributors located coast to coast. Before you order replacement parts, get the facts about Panelyte. Write today for a specification sheet and the name of your nearest Panelyte distributor to Panelyte, Dept. P-627, St. Regis Paper Company, 150 East 42nd Street, New York 17, New York.

St.Regis PANELYTE®

TIMBER SUPPLY IN THE SEABOARD SOUTHEAST

Despite the extraordinary growth of the pulp and paper industry in the past two decades, present indications point to the necessity for further increased capacity in the near future.

Nowhere are the fundamentals more favorable for this expansion than the Seaboard Southeast, where timber is being grown faster than it is being used.

In the six states of Virginia, North Carolina, South Carolina, Georgia, Alabama and Florida, more than 113,000,000 acres, or 60% of the total land area, are in growing forests, insuring a continuous supply of low-cost pulpwood. Numerous streams afford an abundance of water for pulp and paper operations.

FREE SITE INFORMATION

When you are in the market for a pulp and paper location, converter plant, or distribution facility, let us submit details on some of the excellent sites which we have catalogued in this area.

Address: Warren T. White
Assistant Vice President
Seaboard Air Line Railroad Company
Richmond 13, Virginia

THROUGH THE HEART OF THE SOUTH

NEW EQUIPMENT & SUPPLIES

Upstroke Baler Has Higher Platen Power

The American Baler Co. of Bellevue, has introduced an upstroke baler whose totally enclosed, oversized baler motor is said to deliver 32 per cent more power than the conventional downstroke to the platen unit. The motor is mounted high out of the way of personnel and fork lift trucks. Some of the average bale weights produced by the baler are: over 1200 lbs. for corrugated; 1500 lbs. for mixed paper; newsprint nearly 1700 lbs. These bales are generally made in one complete pass. The American UD, as the upstroke models are known, features totally enclosed, no-stretch, double heat treated chains that are guaranteed. Controls feature reversing starter, up-down-stop push buttons and instant overload control and non-repeat control on pressing stroke. Two section reinforced door allows operator to hold an already formed bale with the upper door while additional material is swept into the pit at the open lower door level for further compression. With lower door closed and upper door open, the platen can be brought upward so that entire tied bale is tilted forward when it meets the resistance of the lower door. This feature makes it easier to move the bale out of the baler. The American UD Baler also features two pit arrangements: baler can be mounted at bottom of the pit in the conventional way or on a basement floor; baler can be mounted from the main floor or securely fixed I beams. The Model UD is said to make dense bales of any compressible materials.

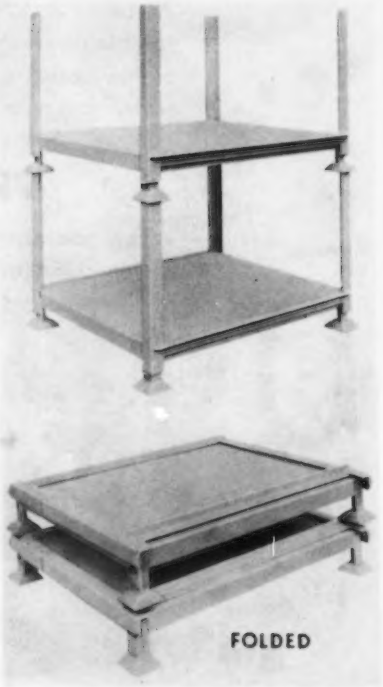
Portable pH Meter Needs Only Weekly Standardization

Designed by Swiss engineers and manufactured by Sel-Rex Instruments, Inc., Nutley, N. J., under an exclusive license, the line-operated portable pH meter reportedly requires standardization once-a-week or less. The palm-sized meter has been in use in plants and laboratories of several European chemical processors.

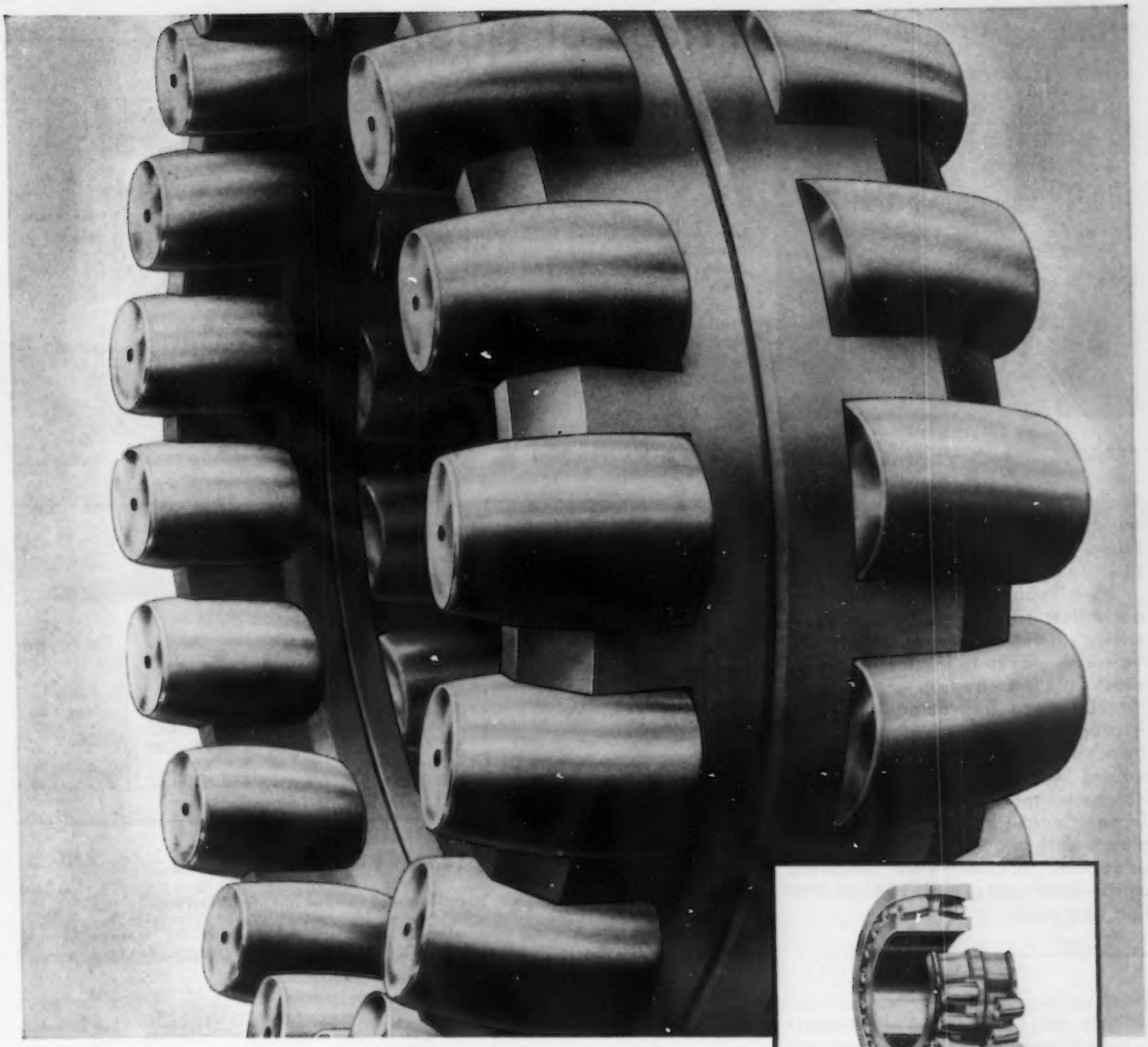
Other reported design features include: constant-reading meter; amplifier-stabilized, drift-free indicator needle; reference pointer; easily-connected solid ground (usually found only on larger, more expensive units); fast-response tubes which require no "breaking-in" time spent watching the indicator needle vacillate during readings; 115V line operation to eliminate warm-up time. The Electrion may be left in continuous service for instant reference and constant pH readings. A technical bulletin is available on request.

Folding-Stacking Pallets Save Space

Folding-stacking pallets for plant or warehouse materials handling offer savings in storage and transportation. The pallets were designed by Palmer-Shile Co., 12663 Mansfield, Detroit 27, Mich. They are available in standard sizes, or manufactured to customer size and capacity requirements. Pallets are of all-steel welded construction.



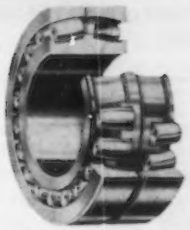
Setting up or folding is accomplished instantaneously by raising or lowering the corner posts in keyhole slots on the base plate. There are no



"Caged" for Longer Life!

The two land-riding cages in Torrington Spherical Roller Bearings assure proper roller spacing and guidance, even under rugged conditions of shock load and sustained high speeds. These fully machined cast bronze cages operate independently. Their design eliminates drag on rollers. These high-strength cages help bearings give longer life by providing low friction, smooth running and cool operation. Highly effective and generous lubrication of all contact surfaces is achieved with the open-end cage design.

The result: Torrington Spherical Roller Bearings are built to give extra years of unmatched service life in heavy-duty applications. Torrington's long experience in design, engineering and manufacture of every basic type of anti-friction bearing provides the finest spherical roller bearings available. You'll find it pays to standardize on Torrington.



Superior design features of TORRINGTON SPHERICAL ROLLER BEARINGS

- integral guide flange for roller stability
- asymmetrical rollers seek flange for positive guidance
- electronically matched rollers
- size-stabilized races
- fully machined land-riding bronze cages
- controlled internal clearances
- even load distribution
- inherent self-alignment
- long service life

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THE TORRINGTON COMPANY South Bend 21, Indiana • Torrington, Conn.

CERAMIC CONES for centri-cleaners, being introduced by Bauer Bros., Springfield, Ohio, have proven to outlast metallic cones of the hardest alloys as much as 10-1. It is available as optional original equipment or as a replcement part. Bauer reports that trials in pulp mills have shown these advantages: (1) extreme resistance to friction, heat and shock; (2) the strength of cast iron; (3) continued use actually reduces friction and minimizes clogging, due to a self-cleaning and self-polishing action; (4) field installation is simple, no special tools required; and (5) on larger Centri-Cleaners, the cone replaces both the lower cone and the underflow nozzle. This simplifies construction and greatly reduces friction and wear.

small parts and one man can set up or fold without tools. When folded, four pallets occupy the space of one set up for use. Elimination of crossbraces permits materials selection from any side, as well as load overhang. Safety pockets welded to the base plate give rigid support in stacking pallets to any height.

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Bleached Gw'd	$ 97.50/100.00	$97.50/100.00			
Kraft, Blchd.	‡152.00/160.00				§157.50/ —
Kraft, Blchd. Hdwd.	152.00/ —		140.00/ —		
Kraft, Semi-bleached.	140.00/145.00				
Kraft, Unbl.	117.50/125.00	125.00/130.00	†125.00/130.00	125.00/ —	
Sulphite, Blchd.	‡150.00/155.00	‡150.00/155.00	*155.00/ —	*155.00/ —	155.00/ —
Sulphite, Bl. Hdwd.	150.00/ —				
Sulphite, Unblchd.	135.00/ —	135.00/ —	†135.00/ —	*135.00/ —	
Sulphite, Unb'l. Gl'sn		140.00/ —	†134.00/ —		
Soda, Blchd.	147.00/150.00	150.00/ —			

§ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances.
‡ Depending on Brightness.

COTTON LINTERS

F.O.B. OIL MILLS
WEEK ENDED JUNE 14

	Atlanta	Memphis	Dallas	Los Angeles
Grade 1	n.a.	n.a.	n.a.	n.a.
2	n.a.	n.a.	n.a.	9.00/ —
3	$7.50/7.00	$8.50/7.50	$7.50/7.00	8.50/8.00
4	7.00/6.25	7.25/6.25	6.50/6.25	7.75/ —
5	6.25/5.75	6.00/5.50	6.00/5.50	7.50/7.00
6	5.75/4.75	5.25/5.00	5.25/5.00	6.50/4.50
7	4.75/4.25	4.50/4.00	4.75/4.00	4.25/4.00

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York	Boston	Chicago	Los Angeles
	June 20	June 20	June	June
No. 1 Mixed Papers	$ 7.00/ 9.00	9.00/ 11.00	6.00/ —	12.00/ 13.00
No. 1 News	12.00/ 13.00	12.00/ 13.00	13.00/ —	12.00/ —
Overissue News (Lg. size)	11.00/ 13.00	11.00/ 13.00	18.00/ —	18.00/ 19.00
Mill Wrappers	19.00/ 22.00	13.00/ 15.00	9.00/ —	12.00/ 14.00
Old Corrugated Containers	22.00/ 23.00	19.50/ 20.00	18.00/ —	23.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	— / —	30.00/ —	55.00/ —
New Double Kr. Ld. Corr. Cuts	32.50/ 35.00	35.00/ —	35.00/ —	35.00/ —
(Semi-chem. medium)	47.50/ —	47.50/ —	45.00/ —	— / —
New 100% Kraft Corr. Cuts	40.00/ 42.50	— / —	57.50/ —	— / —
New Br. Kraft, Env. Cuts	70.00/ 75.00	70.00/ 75.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Prntd.	55.00/ 60.00	55.00/ 60.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Unprintd.	60.00/ 65.00	65.00/ 75.00	60.00/ —	60.00/ —
No. 1 Groundwood Shvs.	25.00/ 30.00	25.00/ 30.00	17.00/ —	32.50/ 35.00
White Newsblanks	47.50/ 52.50	47.50/ 52.50	35.00/ —	55.00/ —
No. 1 Soft White Shvs.	60.00/ 65.00	57.50/ 60.00	60.00/ —	75.00/ —
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	70.00/ —	— / —
Hd. White Shvs.	85.00/ 90.00	90.00/100.00	85.00/ —	90.00/ 95.00
Hd. White nv. Cuts	100.00/105.00	105.00/110.00	90.00/ —	110.00/113.00
Col. Tab. Cards	42.50/ 45.00	42.50/ 45.00	45.00/ —	40.00/ 45.00
Manila Tab. Cards	62.50/ 65.00	62.50/ 65.00	65.00/ —	70.00/ 75.00
No. 1 Col. Ledger	35.00/ 40.00	35.00/ 40.00	40.00/ —	27.00/ 29.50
White Ledger	48.50/ 52.50	50.00/ 55.00	50.00/ —	50.00/ 55.00
Mixed Book & Mag.†	22.00/ 25.00	— / —	12.50/ —	— / —
No. 1 Books‡	16.50/ 19.00	14.50/ 16.50	27.50/ —	13.50/ 14.00

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% of groundwood.

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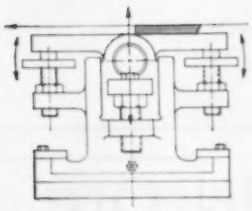

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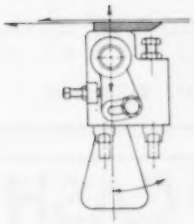

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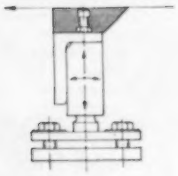

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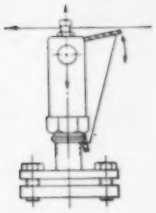

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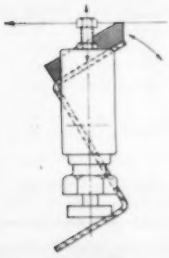

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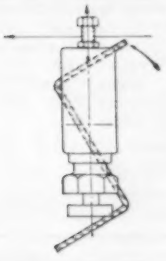

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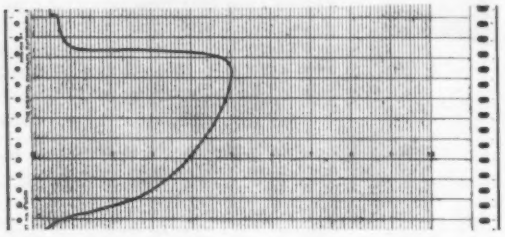

Specimen extension:	1" per min.
Chart speed:	5" per min.
Test capacity:	50 lbs.
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3—Sandy Hill 81″ trim single cyl. Tissue
1—M & W 72″ Fourdrinier paper machine
1—B-C 100″ 2 cyl. Board Machine Complete
1—M & W 72″ Yankee Fourdrinier

CYLINDER MOLDS
2— 63″ face x 36″ dia w/rubber couches
1—104″ face x 36″ dia
1—107″ face x 48″ dia; A-F Brng
8—124″ face x 36″ dia w/rubber couches
1—131″ face x 42″ dia; A-F Brng
1—136″ face x 54″ dia; SS covering

CYLINDER WET ENDS
Downingtown single cylinder; 99″ face x 48″ dia.; 18″ dia. couch

DRYERS—HYDROSTATICALLY TESTED

24″ Dia.:
39—46″ face; Chrome plated
1—156″ face w/gear and steam joint

28″ Dia.:
3— 70″ face w/gears & bearings
3— 73″ face w/gears & bearings
3— 76″ face w/gears & bearings
3— 77″ face w/gears & bearings
2— 84″ face
2— 84″ face w/accessories

36″ Dia.:
1— 42″ face
2— 44″ face
2— 46″ face
4— 70″ face w/gears & bearings
11— 72″ face w/gears & bearings
1— 74″ face Lukenweld w/A-F Brng
1— 74″ face w/gears & bearings
3— 75″ face w/gears & bearings
5— 75″ face
9— 76″ face w/gears & bearings
1— 77″ face w/gears & bearings
1— 78″ face w/gears & bearings
2— 80″ face
5— 84″ face
1— 88″face
18— 90″ face; complete section
9— 92″ face; complete section
1—138″ face
10—160″ face

42″ Dia.:
45— 96″ face w/gears, frames & bearings
1—120″ face
1—160″ face

48″ Dia.:
57— 46″ face; chrome plated
12— 82″ face; complete section
5— 84″ face
24—106″ face
11—106″ face w/gears & bearings
12—110″ face w/gears & bearings
10—123″ face w/gears, frames & bearings
1—128″ face

DRIVES—ENCLOSED RIGHT ANGLE
1—Beloit 65 h.p. Ratio 2.88 to 1
4—Jones 65 hp Ratio 4.83 to 1
1—Michigan 92½ h.p. ratio 10.1 to 1
1—Phila. 28 h.p. Ratio 10.56 to 1
1—50 h.p. Reliance VS with MG set & controls

EMBOSSERS
1— 80″ Hudson Sharp; A-F Brng
2— 62″ Textile Machinery Co; w/drives

EXTRACTOR ROLLS—DOWNINGTOWN
2—139″ face x 24″ dia.; A-F Brng.
1—128″ face x 24″ dia.; Complete Section

FLAT SCREENS
1— 4 plate Tailing Screen
2— 12 Plate IMPCO w/Dunbar Drives
8— 14 plate IMPCO—Bronze Vats

INLETS & HEADBOXES
1—106″ Valley w/8″ distributing roll
1—131″ Valley w/10″ distributing roll, SS lined

JORDANS
2—Appleton #1 w/A-F Brng
1—N & W Pony w/75 h.p motors
1—Horne w/AF Brngs
4—Shartle Miami #2 w/A-F Brngs

MOTORS 3 PH 60 CYCLE
1—100 hp GE; 440 v; 695 rpm
1—250 hp West, 450 v., 450 rpm. Synchronous/exciter
1—300 hp West; 2200 v; 503 rpm
1—350 hp GE; 2200 v; 720 rpm: Synch

PAPER MACHINE DRIVES
1—De Laval 100 h.p. steam turbine w/reducers

PULP MILL EQUIPMENT
1—Lannoye #1 Pulper

PUMPS—OPEN IMPELLER
1—Shartle 10 x 20 Duplex
23—Centrifugal Stock and Water Pumps

REELS
1—100″ Kohler automatic two arm unwind reel; 60″ dia rolls; new condition
1—109″ two bowl upright
1—123″ Beloit—2 bowl
1—126″ Beloit Aldrich surface drive type
1—146″ B & S pope type w/Reliance drive

REFINERS
2—Jones Fibremasters—New
2—#1 Claflin; A-F Brng
1—24″ Bauer Double Disc w/two 50 h.p. motors
1—24″ Downingtown Weiner; new

ROLL GRINDERS
1—124″ x 30″ Farrel w/crowning device
1—208″ x 32″ Farrel w/crowning device

ROLLS

Distributor—Stainless Steel
2— 8″ dia. x 115″ face
1— 6½″ dia. x 115″ face

Couch—Rubber Covered
20 Misc. Sizes Dwngs Available

Press—Rubber or Brass Covered
71 Miscellaneous sizes. Drawings available

Felt—Steel, Brass, Rubber Covered
335 Miscellaneous sizes. Drawings available

Calender—Chilled Iron
72 Miscellaneous sizes. Drawings available

ROTARY SCREENS
5—Bird #3A, Model 100 w/copper vats
1—Jones & Leithwalk copper lined

SAVEALLS
1—48″ face x 42″ dia; iron end vat
1—78″ face x 48″ dia; wood vat

SHEETERS
1— 36″ Beck w/layboys & backstand
1— 45″ Beck w/backstand & jogger
5— 56″, 60″, & 70″ Hamblets w/backstands
2— 65″ Kidder w/elec. eye and layboy
1— 74″ Hamblet w/motor
1— 76″ Beloit Duplex
1— 82″ Hamblet w/backstand
1— [illegible]″ Hamblet duplex w/layboy, 10 roll backstand
1—105″ Hamblet
1—112″ Beloit Duplex Board Cutter; A/F Brng

SLITTERS & REWINDERS

17¾″ Maximum Rewind Diameter
1—42″ Cameron Type 26-2A

24″ Maximum Rewind Diameter
3— 42″ Cameron Type 6
1— 42″ Cameron Type 6 Shear Cut
1— 62″ Cameron Type 8
1— 72″ Cameron Type 9-5

30″ Maximum Rewind Diameter
1— 60″ Langston Shear Cut
1— 72″ Cameron Type 10; A-F Brng
1— 72″ Cameron Type 10 Shear Cut; A-F

36″ Maximum Rewind Diameter
1— 52″ Johnstone Model 14H; A-F Brng.
1— 62″ Cameron Type 8
1— 70″ Variable Speed Center Winder
1— 72″ Cameron Type 10; A-F Brng

42″ Maximum Rewind Diameter
1— 40″ Egan Shear Cut; A-F Brng
1— 60″ Kidder Model SH Low Bed
1— 72″ Beloit Shear Cut
1— 92″ B & S; A-F Brng
1—136″ Cameron Type 18; A-F Brng
1—161″ Cameron Type 18 w/60 hp Reliance VS Drive

48″ Maximum Rewind Diameter
1— 82″ Langston Shear Cut; A-F Brng
1— 86″ M & W Four Drum Shear Cut
1—110″ Langston
1—152″ Langston Shear Cut

60″ Maximum Rewind Diameter
1—112″ Cameron Type 18
1—120″ M & W two drum w/75 h.p. drive
1—120″ Langston
1—136″ Langston Type DA Shear Cut; A-F

SLITTERS & REWINDERS—DOUBLE REWIND

24″ Maximum Rewind Diameter
1—42″ Cameron Type 26-3A, w/constant tension unwind stand
2—48″ Langston Shear Cut

30″ Maximum Rewind Diameter
1—42″ Essex Shear Cut; A-F Brng.
1—42″ Cameron Type 28-3
1—92″ Cameron Type 28-3 w/vari-drive

STOCK CLEANERS
2—1000 g.p.m. Shartle Hydrafuges w/motors
14—Bird Dirtecs; 2″ & 6″ bronze
1—Bird Dirtec 12″. Rebuilt by Bird
21—4″ Vortraps—Bronze
3—Bird Centrifiers—Style CFL—S.S.

STOCK REGULATORS
2—Braemer SS; 25 t/d cap
2—Poirier; 25T/D cap.

SUPERCALENDERS
2— 30″ Norwood 4 roll
2— 63″ Norwood 8 roll; A-F Brng
1— 92″ Norwood 7 roll w/drive

SUCTION EXTRACTOR ROLLS—DOWNINGTOWN
1—105″ face x 19″ dia.
1—126″ face x 22″ dia.; complete section
1—134″ face x 20″ dia.; A-F Brng.

SUCTION PRESS SECTIONS
1—126″ face x 24″ dia. RC; complete section
1—134″ face x 22″ dia. Sandusky w/frames, top roll, etc.

TRIMMERS—POWER BACK GAUGES
2— 38″ Seybold w/motors
1— 57″ Seybold Precision
2— 65″, 74″ Seybold Daytons

VACUUM PUMPS
8—H-4, ½H-5, & H-5 Nash
4—L-5 & L-7 Nash
6—#2, #3, #4, #6 & #7 Nash Hytors
1—8 x 10 Connersville
3—MD-2 Nash w/motors; new laboratory models

YANKEE DRYERS
1—132″ face x 10′ dia Beloit; 35 psi

Help Wanted

PAPER MILL ENGINEERS

Graduate Mechanical Engineers with at least 2 years pulp and paper mill experience. Work involves design, equipment layout, and project coordination of paper mill projects and related work.

MECHANICAL ENGINEERS

Graduate Mechanical Engineers to age 35. Duties include piping design, ventilation design, and equipment layout. Prefer applicants with 2 to 5 years pulp and paper mill experience, although others will be given serious consideration.

ELECTRICAL ENGINEER

Graduate Engineer to age 35 with minimum of 2 years heavy industrial experience required. Work involves designing industrial power systems, drawing up specifications necessary in revamping existing industrial electrical systems, cost estimation, and equipment selection.

CIVIL ENGINEER

Graduate Civil Engineer to age 35 with at least 2 years experience in structural and/or concrete design. Should be able to follow design work as required for completion of heavy industrial buildings and foundations.

All of the above positions are permanent. Starting salary based on qualifications with periodic merit increases. Complete insurance, retirement, and vacation programs established. All replies will be treated in confidence. Submit resume of experience and qualifications to:

BOWATERS
Industrial Relations Department
Calhoun, Tennessee

TF

Help Wanted

DEVELOPMENT ENGINEER

We are looking for a chemical or mechanical engineer with an extensive pulp and paper process background.

The position is basically equipment development for the pulp and paper industry, however, a strong process background is essential.

This man should be capable of handling projects with only limited quidance and should have a minimum of three years mill experience.

Necessity for industry contacts will involve some travel.

Please forward complete resume including salary requirements to:

C. R. Farrell
DORR-OLIVER INC.
Havemeyer Lane
Stamford, Conn.

J-27

Help Wanted

PAPER CHEMIST

with mill experience in paper and coating wanted for technical sales service. Willing to travel as required. Send resume, photograph and salary required. Replies will be treated in strict confidence. Address Box 60-117 care Paper Trade Journal.

A-15

Situations Wanted

Available—Mechanical Engineer with very extensive experience in the pulp, paper and board industry in high level engineering, power and maintenance positions. Electrical training and background. Presently and for several years in advisory and assistance connections mainly on modernization and renovation projects for process or power. Correspondence invited. Address Box 60-119 care Paper Trade Journal.

J-27

For Sale

Newsprint Paper Roll Handling System Complete by 3 Ton Capacity OET Cranes. Complete with Runways, Electric Roll Grabs and PB for one man control. New condition *at a bargain price.* Current 220 AC.

HAWKINS & CO.
7203 N. Western Ave., Chicago 45, Ill.

J-27

For Sale

FRENCH BOARD MILL AVAILABLE

There is available in France a small three-machine board mill for sale.

The mill is ideally situated near Paris.

If any one is interested, he had better act fast as the mill is situated on valuable property and should not be available very long.

Address Box 60-128 care Paper Trade Journal.

J-4

For Sale

FOR SALE

1—40 ton per day Shartle HYDRA-SLUSHER, complete with 125 h.p. motor (new, never used).

1—96" Black-Clawson WET MACHINE, complete with pumps, drives, etc. (new, never used).

J. J. Ross Company
377 Frelinghuysen Avenue
Newark 12, N. J. Bigelow 3-3720

J-27

For Sale

FOR SALE

Egan Extruder—6" inline with 74" Cammeron Slitter. Reliance drive, chill rolls, turret winder, etc.

Box No. 60-132
Care Paper Trade Journal

J-4

For Sale

For Sale

1—Dryer Section consisting of 18—36" x 76" Dryers complete with Frames, Gears and Bearings.
5—36" x 82" Dryers, Frames, Gears and Bearings.
9—36" x 84" Dryers, Frames, Gears and Bearings.
The above dryers maximum operating pressure is 50 P.S.I.G.

1—Laminator capable of handling sheets or rolls 52" width Perry Liner, 11 rolls, steam heated, Serial #322, Moore & White Simplex Sheeter with Automatic Layboy, Multiple roll backstrand, separate unwind for paper.

Above equipment is located in New Jersey and can be inspected while in operation.

WRITE—WIRE—PHONE

RUDERMAN MACHINERY EXCHANGE
GOUVERNEUR, NEW YORK
Telephone 333-334

TF

BUY
U. S. SAVINGS BONDS

For Sale

FOR SALE
BARGAIN PRICES

1—45" Seybold Dayton
1—65" Seybold Dayton
1—75" Seybold 20th Century

The above trimmers are in excellent condition, complete with starting equipment.

Write—Wire—Phone

RUDERMAN MACHINERY EXCHANGE
GOUVERNEUR, NEW YORK
Telephone 333-334

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FOR SALE

2—1960 Model Aisle Master Lewis Sheppard Electric Lift Trucks. Tri Lift mast to 176" with Side Shifter, 36" Forks and 45" x 2¾" Ram—2,000 lb. lift @ 27½" L.C. Address Box 60-130 care Paper Trade Journal.

J-11

Wanted

WANTED

Used 74" and 84" Seybold Power Paper Cutters and a Model 26 and 100 Matador Bag Machines. Address Box No. 60-131 care Paper Trade Journal.

N.C.

Government Bids

PROPOSALS

FOR FURNISHING

PAPER AND ENVELOPES FOR THE U. S. GOVERNMENT PRINTING OFFICE

SEALED PROPOSALS will be received until 10 a.m. E.D.S.T., July 11, 1960, in the room of the Joint Committee on Printing, in the Capitol, Washington, D.C., for furnishing the paper for the public printing and binding, and blank paper and plain envelopes for the use of the Government departments and establishments in the District of Columbia, for the terms of 3 months for paper and 6 months for envelopes beginning August 1, 1960, deliveries to be f.o.b. Government Printing Office Warehouse, or warehouse siding, Washington, D.C. The proposals will be opened in the presence of and the award of contracts made by the Joint Committee on Printing to the lowest and best bidders for the interest of the Government whose bids are in conformity with the requirements of the proposals. The committee reserves the right to reject any or all bids, or to accept any bid or any part and reject the other part, if, in its opinion, such action would be in the interest of the Government.

Blank proposals containing the instructions, schedule, and specifications may be obtained by addressing Raymond Blattenberger, Public Printer, Washington, D. C.

Contracts will be entered into for supplying the quantities required, whether more or less than the estimates as provided in paragraph 26 of the proposal for paper and paragraph 24 of the proposal for envelopes.

The approximate estimated quantities set forth in detail in the schedule comprise:

PAPER

The approximate estimated quantities set forth in detail in the schedule comprise:

2,075,000 pounds machine-finish book paper; 30,000 pounds machine-finish book end paper; 105,000 pounds english-finish book paper; 10,727,000 pounds offset book paper; 245,000 pounds antique book paper, for offset printing; 160,000 pounds supercalendered book paper; 1,913,000 pounds coated book paper; 621,000 pounds mimeograph paper; 474,000 pounds duplicator copy paper; 3,383,000 pounds writing paper; 8,504,000 pounds writing paper for offset printing; 5,000 pounds 100% fine writing paper; 208,000 pounds map paper; 282,000 pounds manifold paper; 350,000 pounds white mimeograph bond paper; 1,544,000 pounds bond paper for offset printing; 8,500 pounds 100% bond paper, for offset printing; 90,000 pounds translucent bond paper, for offset printing; 2,000 pounds 100% parchment deed, for offset printing; 955,000 pounds ledger paper for offset printing; 45,000 pounds 100% ledger paper for offset printing; 1,720,000 sheets index paper, for offset printing; 620,000 pounds index paper, for offset printing; 105,000 pounds 100% cream-white index paper, for offset printing; 570,000 pounds antique-finish cover paper, for offset printing; 60,000 pounds litho-ccated cover paper; 5,000 sheets cloth-lined cover paper; 15,000 pounds manila paper; 225,000 pounds kraft paper; 610,000 sheets gummed paper; 10,000 pounds blotting paper; 12,000 pounds oiled manila tympan paper; 40,000 pounds manila tag board; 5,000 pounds wallet board; 10,000 pounds jute tag board; 10,000 pounds manila cardboard; 93,000 sheets railroad board; 140,000 pounds board, tan and/or blue; 2,960,000 pounds postal card paper; 10,000 pounds gray folding bristol board; 90,000 sheets pressboard; 235,000 pounds newsboard; 390,000 pounds book cover board.

ENVELOPES

The approximate estimated quantities set forth in detail in the schedule comprise:

37,020,000 kraft; 14,710,000 writing, chemical wood; 205,000 100% writing, white; 53,000 25% bond, white; 340,000 100% bond, white; 35,000 50% ledger, white.

By direction of the Joint Committee on Printing.

RAYMOND BLATTENBERGER,
Public Printer.

WASHINGTON, D.C.
June 20, 1960.

J-27

YOUR POSTMASTER SUGGESTS:

FOR FASTER AND MORE EFFICIENT POSTAL SERVICE - - -
LEARN THE "A.B.C.'S" OF GOOD MAILING HABITS!

A postal delivery zone number helps speed your mail!

B certain to include your return address on all letters and packages!

C that the delivery address is correct and complete!

— AND —

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WHEN REPLYING to advertisements containing box numbers, please mention that box number in your address. The figures in the lower right hand corner of advertisements are NOT box numbers,—they signify the expiration date of that particular insertion.

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Arthur E. Gordon, Business Mgr.

Francis J. Gordon — Alrick Man

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Cable: "Lockmin"

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79 W. Monroe St. CEntral 6-2784

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279 N. E. 79th Street. PLaza 8-5516

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620 Sherman Street. KEystone 4-4669

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67 Avenue des Champs Elysees, Paris, 8.

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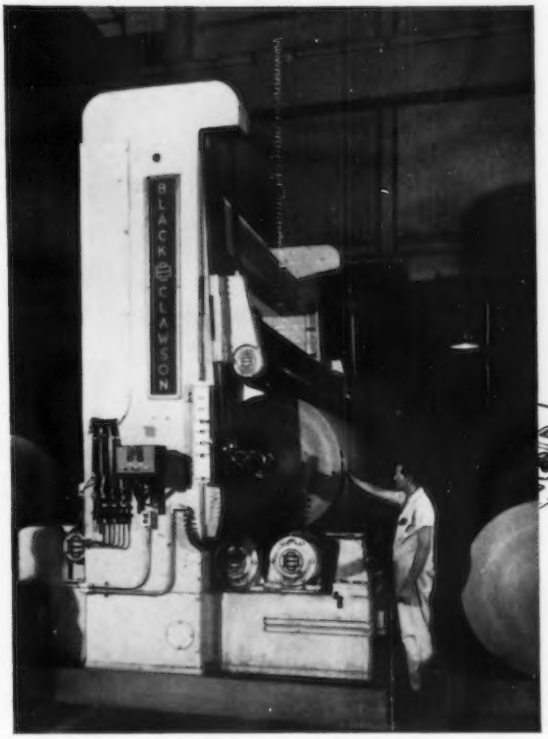
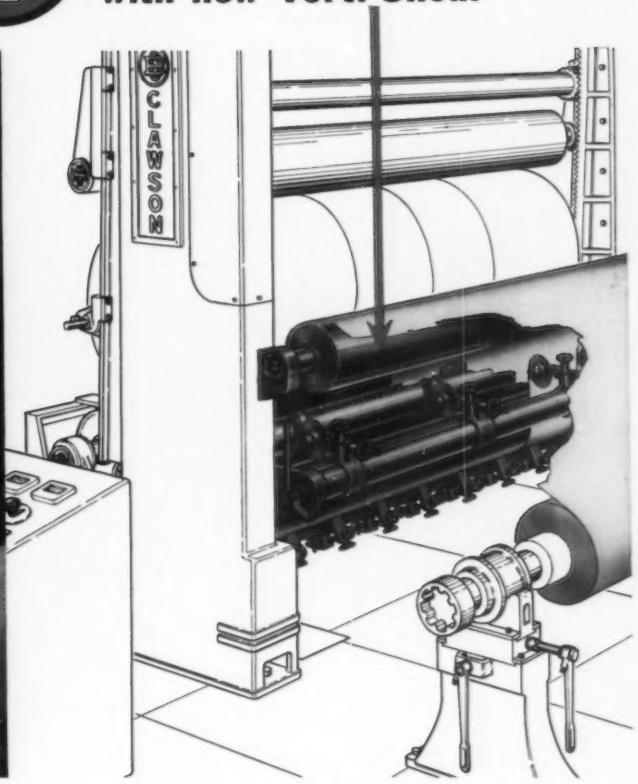
Hi-Speed Rollflyte Winders *with new* Verti-Shear*





*Verti-Shear . . . a new vertical slitting method designed to make Rollflyte winders more productive and easier to operate, has several obvious advantages.

- Shorter draw from point of slit to point of wind
- Slitters and adjustable spreader bar are readily accessible to the operator
- Minimum downtime for maintenance
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Rollflyte mill winders have heavy box framing that dampens vibration and adds stability. Rotating members are properly sized for minimum deflection and balanced for speeds in excess of operating speeds.

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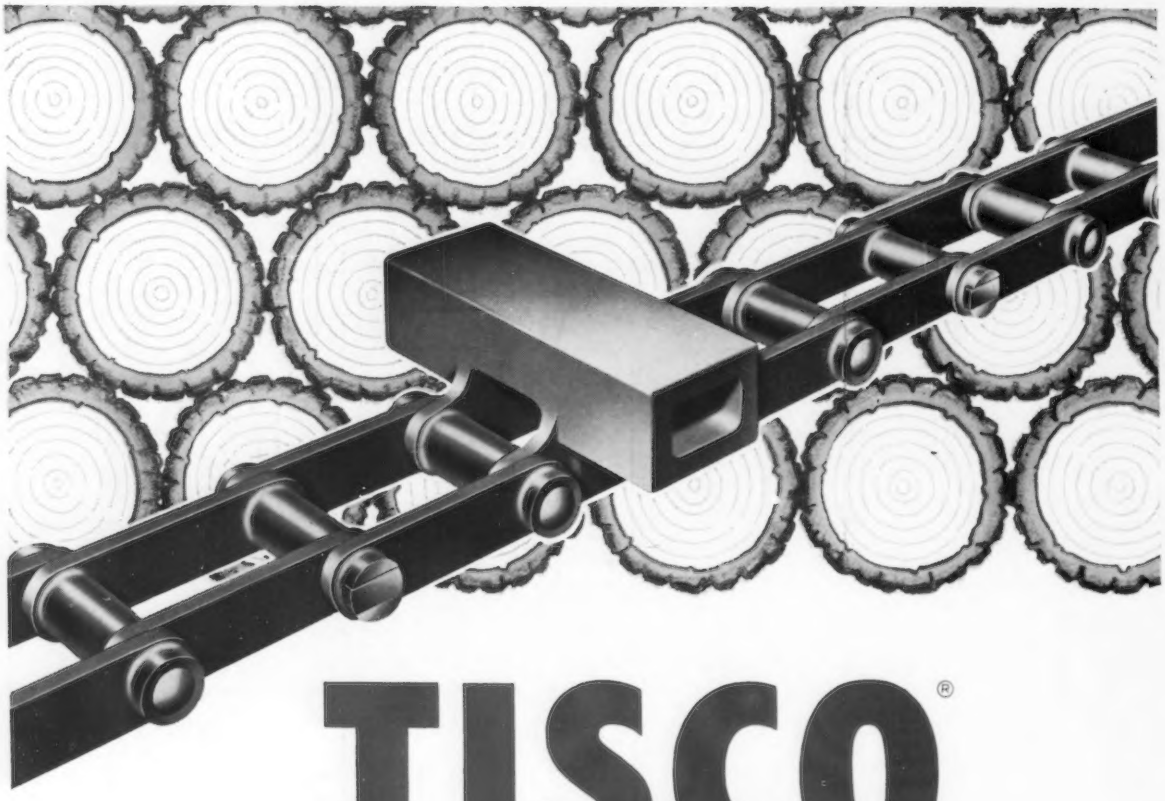

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